Gigabit Wi-Fi in the air?
IEEE's Very High Throughput Study Group paves the way for faster wireless LANs. **Page 11.**

DEMO

Show highlights from 'Net Buzz
DVD copyright law, online media spin, user-friendly passwords and GPS-enabled carpooling were just a few of the hot topics at last week's DEMOfall 08 in San Diego. **Page 42.**

NETWORKWORLD

Maximize your return on IT ■ www.networkworld.com September 15, 2008 ■ Volume 25, Number 36

Why the FCC cut carriers some slack
FAQ on decision to exempt big carriers from collecting and reporting on customer service data. **Page 12.**

Cisco pushes "network memory"
Engineer's big idea could boost router and switch performance. **Page 14.**

VMware in Vegas
New CEO Paul Maritz takes the stage to address public concerns about VMware and provide a road map for the future of virtualization. **Page 20.**

Google at 10
Columnist Scott Bradner looks back and ahead. **Page 26.**

Spotlight on next-gen switching

Foundry, Enterasys and Force10 to pitch advanced gear at Interop

BY JIM DUFFY

Switching will take center stage at this week's Interop New York conference, where vendors such as Foundry, Enterasys and Force10 will roll out new and enhanced products, many targeted at branch and small offices.

A common theme among the announcements will be support for next-generation environments harnessing video, unified communications, IPv6 and embedded security that is identity-based and policy driven. The Foundry and Enterasys offerings are aimed at smaller businesses and workgroups, a recent trend in switching.

"They're light versions of their flagship products," says Steve Schuchart, an enterprise network systems analyst at Current Analysis. "They're designed to move a little bit more down market without losing all of the functionality — bring stackability, especially for things like VoIP — without dragging all of the Layer 3 [features] along."

However, Interop New York will be minus a few key switch players, including Juniper Networks, which recently began shipping a line of enterprise LAN switches, and Extreme Networks. Cisco will have a presence at the event, with one of its vice presidents on the keynote slate, but isn't planning any sort of product blowout.

As usual, Interop New York is much smaller than the annual spring Interop event in Las Vegas, though show organizers say numbers will be greater than a year ago.

Foundry will be showing off new switches at Interop, which is expected to draw 8,000 people.

More than 200 exhibitors are scheduled to show their wares, an increase of 16% over last year, and new participants include Dell, HP, Lenovo, Symantec, Palm and Logitech. Show organizers

See Interop, page 24

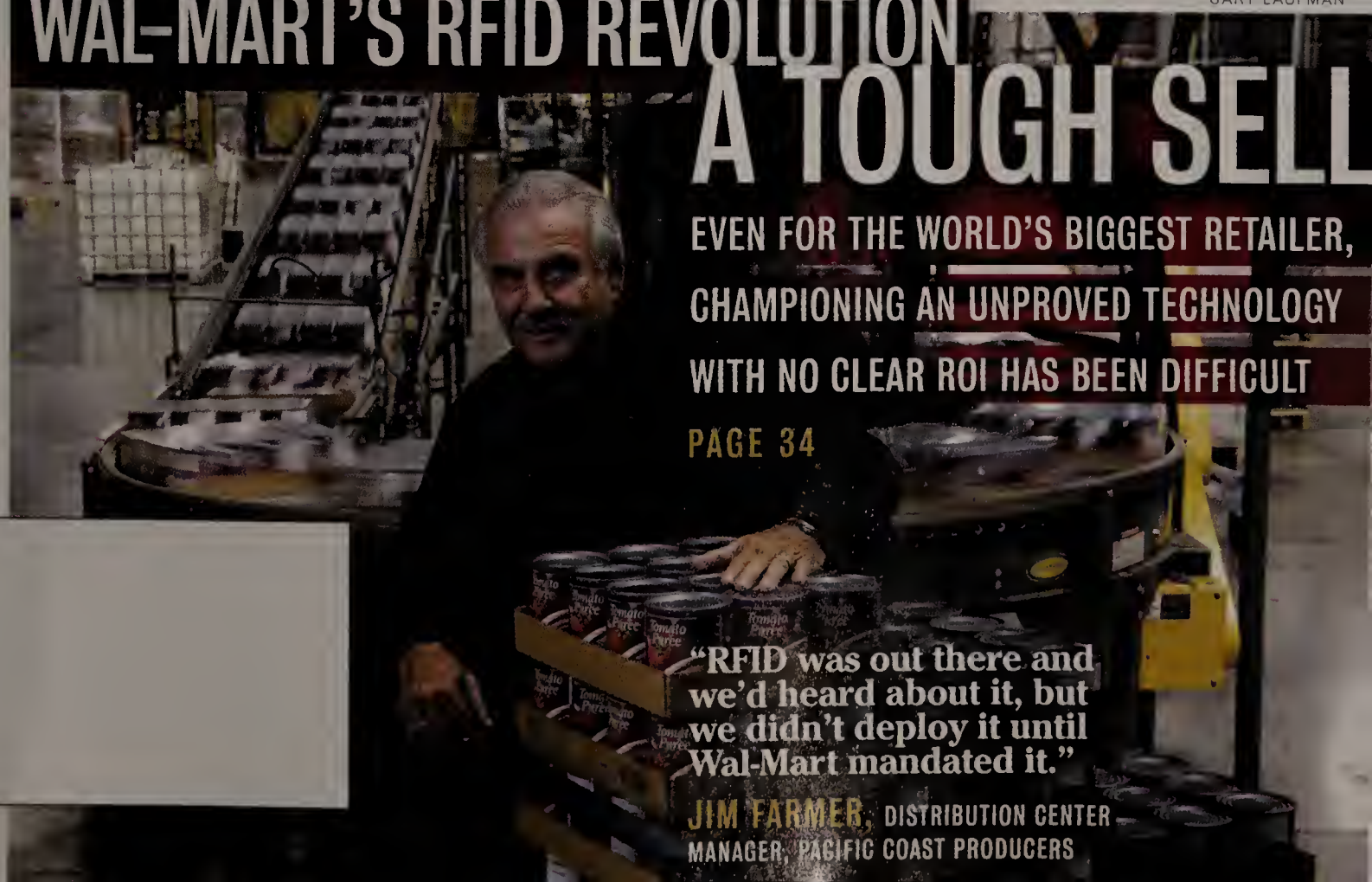
CASE STUDY

WAL-MART'S RFID REVOLUTION A TOUGH SELL

GARY LAUFMAN

EVEN FOR THE WORLD'S BIGGEST RETAILER, CHAMPIONING AN UNPROVED TECHNOLOGY WITH NO CLEAR ROI HAS BEEN DIFFICULT

PAGE 34



"RFID was out there and we'd heard about it, but we didn't deploy it until Wal-Mart mandated it."

JIM FARMER, DISTRIBUTION CENTER MANAGER, PACIFIC COAST PRODUCERS

NEWSPAPER $5.00

LEANER.
MEANER.
GREENER.

Twentieth-century datacenters simply weren't built to handle the demands of twenty-first century business. With these hardwired, high-density computing environments, we've inherited inefficiency, complexity and ever-increasing power and cooling costs. Businesses need a new approach. IBM's New Enterprise Data Center is a vision for the highly efficient, greener-by-design, business-driven IT model you'll need for tomorrow. This isn't some far-off theory. IBM is already working with over 2,000 clients to help make this vision a reality. A greener world starts with greener business. Greener business starts with IBM.

SYSTEMS. SOFTWARE. SERVICES. FOR A GREENER WORLD.

See our Webcast about greener datacenters at **ibm.com**/green/datacenter

IBM

IBM, the IBM logo and ibm.com are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml. © 2008 IBM Corporation. All rights reserved.

9•15•08

NETWORKWORLD

NETWORK INFRASTRUCTURE

11 IEEE readies launch of gigabit Wi-Fi project.

14 Cisco pushes 'network memory.'

16 Dell targets under-performing VMs.

19 San Francisco hunts for mystery network device.

42 Opinion BackSpin: Being in control and illusory losses.

ENTERPRISE COMPUTING

18 IT budgets suffer more shrinkage.

20 VMware CEO to make public debut.

20 Vendors tackle virtual security.

28 Microsoft sets virtualization plan.

APPLICATION SERVICES

14 Kace acquires application virtualization technology.

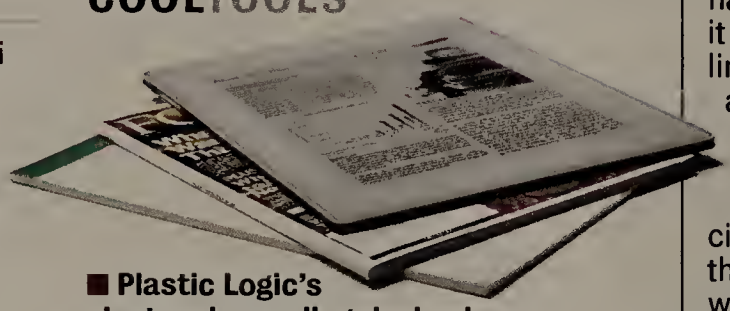
17 Start-up to smooth apps on VMware.

22 Data leaks are a people problem.

26 Opinion Scott Bradner: Life at 10 years AG (after Google).

42 Opinion 'Net Buzz: Rifling through my DEMO notebook.

COOLTOOLS



■ **Plastic Logic's electronic reading device is a DEMO standout.** **See Cool Tools, page 32.**

SERVICE PROVIDERS

12 Why the FCC slashed reporting requirements.

22 Start-up bridges wireless spectrum.

26 Opinion Johna Till Johnson: Innovation in the crucible of war.

TECH UPDATE

30 The benefits of an open source SOA.

32 Mark Gibbs: Desktop virtualization for the enterprise.

32 Keith Shaw: What was cool at DEMOfall 08?

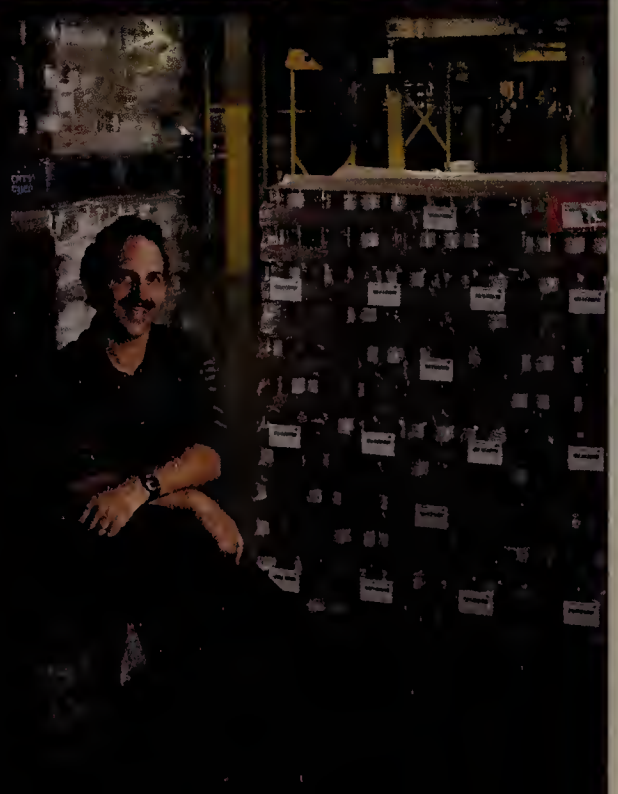
■ **CONTACT** Network World, 492 Old Connecticut Path, Framingham, MA 01701-9002; Phone: (508) 766-5301; E-mail: nwnews@nww.com; ■ **REPRINTS:** (717) 399-1900; ■ **SUBSCRIPTIONS:** Phone (508) 820-8117; E-mail: nwcirc@nww.com; URL: www.subscribenw.com

CASE STUDY

WAL MART'S RFID REVOLUTION A TOUGH SELL

EVEN FOR THE WORLD'S BIGGEST RETAILER, CHAMPIONING AN UNPROVED TECHNOLOGY WITH NO CLEAR ROI HAS BEEN DIFFICULT

PAGE 34



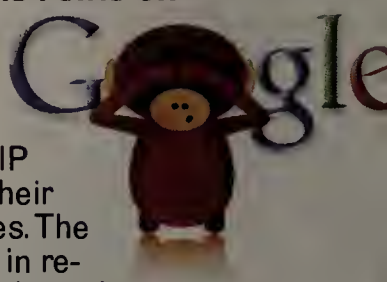
"We saw a way to enhance our business and improve overall as a company that is forward looking and customer focused."

PETER WTULICH, CIO, PACIFIC COAST PRODUCERS

GARY LAUFMAN

GOODBADUGLY

Google loosens reins on your data



Google will halve the time it holds data linking surfers' IP addresses to their Web searches. The move comes in response to regulators' concerns, especially in Europe and the United States, the company said in a blog posting last week. The search giant's new data retention policy is to render the IP addresses in its server logs anonymous after nine months, instead of waiting 18 months as it has until now.

Taking cybercrime seriously

Cybercrime is more than a buzzword, it's a critical business concern, say 1,387 IT professionals surveyed by security firm Finjan. Ninety-one percent of respondents call cybercrime a "major business risk," and 73% say they are more concerned about data theft than about downtime and loss of productivity from malware. In addition, 25% of respondents admit to data breaches in their organizations.

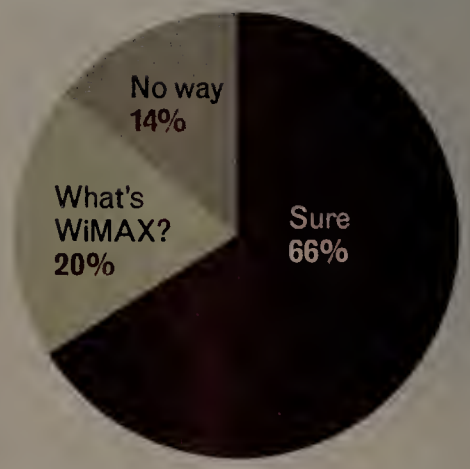
VMware's power couple is out

Former VMware CEO Diane Greene's husband, Mendel Rosenblum, has followed his wife out the door, announcing his resignation just days before VMware hosts an annual event to showcase its virtualization technology. Greene and Rosenblum co-founded VMware and led it for a decade, until its board forced Greene out in July.

POLL

A snapshot of how networkworld.com visitors voted on a key networking issue last week:

Would you consider using WiMAX?



Total voters for this poll: **242**

Vote and discuss: www.nwdocfinder.com/6639

PEERSAY

Vendors need to look inward on exam cheating

Re: Cheaters: Inside the hidden world of IT certification fraud (www.nwdocfinder.com/6621):

The vendors have partially brought this on themselves. They could help resolve this problem in the following ways:

1) Provide representative study/practice materials for their own certifications. The study guides and practice exams that come with the Cisco Press books are nothing like the exam and are no help in preparing. They basically force you to purchase a practice exam from a third party that will give you some idea of what the real exam is like.

2) Offer a retake of a failed exam for free or a discounted rate. My company only reimburses you for an exam if it is passed. If you fail, even by only a few points, they will not reimburse you and you have to pay for the failed exam out of your own pocket. People might be willing to take their chances by using only the official study materials, if the financial penalty was not so high.

3) Use more real-world simulations and stop asking questions about minutiae. There always seem to be questions that are asked that have no practical value. Details that are usually best left to be looked up on the vendor's Web site. The exam should be a test of your practical knowledge of how to do something, not whether you can memorize a bunch of discrete facts. The exams should be written by people who actually use the skills being evaluated, not by some company pulling questions out of a paragraph buried in the middle of the book.

Trevor Hale

Discuss at www.nwdocfinder.com/6622

> **"The exams should be written by people who actually use the skills being evaluated, not by some company pulling questions out of a paragraph buried in the middle of the book."**

Hey, Verizon guy, hear this!

Re: Technology's 10 most annoying fictional characters (www.nwdocfinder.com/6623):

Several years ago, an amusement park had an "Old West" shootout as one of the skits. In the middle of the skit, a Verizon Guy look-alike walked into the middle of the street between the two guys and went, "Can you hear me now?" The two gunslingers looked at each other and then proceeded to shoot the Verizon guy look-alike. Add another slide to the presentation: Jerry Seinfeld. He may as well be fictional.

Craig Kensek

Discuss at www.nw docfinder.com/6624

Solving Firefox 3 certificate problem

Re: Firefox SSL-certificate debate gets gnarly (www.nwdocfinder.com/6625):

Your director of IT needs to be told to stand up a single certificate authority (CA) for the entire organization and use that CA for all in-house sites that you don't want to spend money on. That way you can include that CA in your deployment of Firefox IE, Java, or whatever else supports certificates. Sounds to me like the problem is not one that Firefox caused but more appropriately, that your organization did not utilize PKI appropriately to begin with. Firefox as well as IE has always notified the user if the CA was not trusted; they just finally made it so that the user can't simply click the "I'm an idiot" / "OK" button.

Jason Smith, Jr.

Discuss at www.nwdocfinder.com/6626

Laconic tools have their place

Re: Command-Line Tools: Why So Tight-Lipped? (www.nwdocfinder.com/6627):

Terseness [in output from command-line tools] is OK provided that the calling program knows success or otherwise from the exit code. Not sure if those silent Windows 2008 commands provide an exit code, but if they do then I'm fine with terseness.

Detailed error information needs to be available somewhere, for example the event logs, but terseness is fine especially if sequences of commands are run from scripts.

Mike Smith

Discuss at www.nwdocfinder.com/6627

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 492 Old Connecticut Path, Framingham, MA 01701-9002. Please include phone number and address for verification

▶ SPECIAL NETWORK WORLD FEATURE

SCAN THIS CODE with your cell phone to get the latest IT network news delivered to your cellular device.

To get the client software, use your phone browser to visit **wap.connexto.com**

For more information on code scanning see **www.nww.com/codescan**

NETWORKWORLD

CEO: JOHN GALLANT
EDITOR IN CHIEF: JOHN DIX

■ NEWS

ONLINE EXECUTIVE EDITOR, NEWS: BOB BROWN
ONLINE NEWS EDITOR: MICHAEL COONEY
ONLINE NEWS EDITOR: PAUL MCNAMARA
ONLINE ASSOCIATE NEWS EDITOR: ANN BEDNARZ (612) 926-0470

■ NET INFRASTRUCTURE

SENIOR EDITOR: JOHN COX (978) 834-0554
SENIOR EDITOR: TIM GREENE
SENIOR EDITOR: ELLEN MESSMER (941) 792-1061

■ ENTERPRISE COMPUTING

SENIOR EDITOR: JOHN FONTANA (303) 377-9057

■ APPLICATION SERVICES

NATIONAL CORRESPONDENT: CAROLYN DUFFY MARSAN, (317) 566-0845
SENIOR EDITOR: DENISE DUBIE
SENIOR EDITOR: CARA GARRETSON (240) 246-0098
SENIOR WRITER: JON BRODKIN

■ SERVICE PROVIDERS

MANAGING EDITOR: JIM DUFFY (716) 655-0103
STAFF WRITER: BRAD REED

■ NET.WORKER

EDITOR: MICHAEL COONEY

■ COPY DESK/LAYOUT

MANAGING EDITOR: RYAN FRANCIS
COPY CHIEF: TAMMY O'KEEFE
SENIOR COPY EDITOR: JOHN DOOLEY
COPY EDITOR: CAROL ZARROW

■ ART

ART DIRECTOR: BRIAN GAIDRY
ASSOCIATE ART DIRECTOR: STEPHEN SAUER

■ FEATURES

EXECUTIVE FEATURES EDITOR: NEAL WEINBERG

■ CLEAR CHOICE TESTS

EXECUTIVE EDITOR, TESTING: CHRISTINE BURNS, (717) 243-3686

LAB ALLIANCE PARTNERS: JOEL SNYDER, Opus One; JOHN BASS, Centennial Networking Labs; BARRY NANCE, independent consultant; THOMAS POWELL, PINT; Miercom; THOMAS HENDERSON, ExtremeLabs; TRAVIS BERKLEY, University of Kansas; DAVID NEWMAN, Network Test; CHRISTINE PEREY, Perey Research & Consulting; JEFFREY FRITZ, University of California, San Francisco; JAMES GASKIN, Gaskin Computing Services, MANDY ANDRESS, ArcSec; RODNEY THAYER, Canola & Jones

CONTRIBUTING EDITORS: DANIEL BRIERE, MARK GIBBS, JAMES KOBIELUS, MARK MILLER

■ NETWORKWORLD.COM

EXECUTIVE EDITOR, ONLINE: ADAM GAFFIN
SITE EDITOR: JEFF CARUSO, (631) 584-5829
SITE PRODUCER: JONATHAN SUMMEY
ASSISTANT SITE EDITOR: LINDA LEUNG, (510) 647-8960
COMMUNITY EDITOR: JULIE BORT (970) 482-6454
PROGRAM DIRECTOR: KEITH SHAW, (508) 766-5444
MULTIMEDIA EDITOR: JASON MESERVE
ASSOCIATE ONLINE EDITOR: SHERYL HODGE
ONLINE ASSOCIATE ART DIRECTOR: ZACH SULLIVAN

■ NEW DATA CENTER SUPPLEMENTS

EDITOR: BETH SCHULTZ, (773) 283-0213
COPY EDITOR: CAROL ZARROW

EDITORIAL OPERATIONS MANAGER: CHERYL CRIVELLO
OFFICE MANAGER, EDITORIAL: PAT JOSEFEK
MAIN PHONE: (508) 766-5301
E-MAIL: first name_last name@nww.com

ECONOMY MEETS ECOLOGY.

Energy consumption in datacenters is expected to double in the next five years. Yet many businesses still don't know how much energy their IT is using. So how do you build and manage your IT to reduce energy consumption? With greener software from IBM: a complete range of energy-efficient software to optimize your infrastructure, boost business process efficiency and put practices in place for truly responsible collaboration. With energy at a premium, greener software can help shave millions off your IT and energy budgets. A greener world starts with greener business. Greener business starts with IBM.

SYSTEMS. SOFTWARE. SERVICES. FOR A GREENER WORLD.

Get our green strategy whitepaper at **ibm.com**/green/software

IBM®

IBM, the IBM logo and ibm.com are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml. © 2008 IBM Corporation. All rights reserved.

BLOGOSPHERE

Will a union protect IT jobs? Chip Wenz writes in his Microsoft Training Insider blog: "Would creating an IT union help keep the jobs here in the States? Let's look at the auto industry and check on how well that has helped them. When you combine union negotiated salaries and benefits with lower quality work that the union mentality sometimes creates, you have a great reason for those companies that haven't shipped their jobs overseas to rethink their position." **www.nwdocfinder.com/6634**

DOJ considers big-picture approach with Google. The Google Subnet blog reports: The Department of Justice (DOJ) may be about to hand Google a surprise for its 10th anniversary, one that could make the next 10 years a lot less successful for the search giant. According to a CNET post by Charles Cooper, the DOJ is considering taking the antitrust suit route against Google, not just for its revenue-sharing deal with Yahoo, but more to address Google's overwhelming dominance in the online search advertising market as a whole. And that slant should make Google very nervous. **www.nwdocfinder.com/6635**

Apdex: a standard for reporting application performance. Peter Sevcik and Rebecca Wetzel write in their App Performance View blog, "Imagine a simple numerical measure of user satisfaction with the performance of enterprise applications. It exists and it's catching on. It's called an Apdex score. ... Now more than 50 performance-measurement tool vendors vie with each other on the accuracy and detail of their data. Enterprises often use more than one of these vendors and add home-grown tools to the mix. The result is a sea of numbers which fail to shed light on the user's actual experience." **www.nwdocfinder.com/6636**

Four reasons Microsoft will crush VMware. Mitchell Ashley writes in his Converging on Microsoft blog, "Clearly, Microsoft's been behind the proverbial eight ball in the virtualization market and is just gaining momentum with Hyper-V's release in Windows Server 2008 and now these announcements. So... no better time to strike than while VMware is down, hurting and dazed. Here's my take on the four reasons Microsoft can unseat VMware at the top of the virtualization podium. 1. The Tidal Surge Strategy. 2. Free And Pervasive Software. 3. It's All About Management. 4. War Of Attrition." **ww.nwdocfinder.com/6637**

INTERVIEWS, THE COOLEST TOOLS AND MORE

IT VIDEO

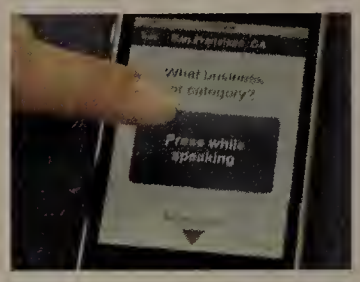
DEMO FALL '08:

Digital paper closer to reality

Plastic Logic's digital reader hopes to do for business people what Kindle is doing for consumers: Eliminate the paper.

www.nwdocfinder.com/6631

DEMO FALL '08:

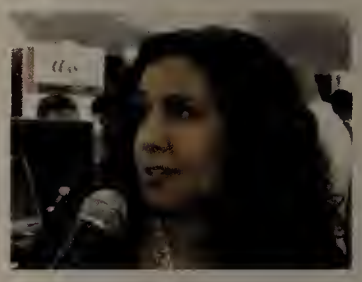


Dial Directions eliminates mobile typing

Mobile users know the pain of trying to peck out search terms when looking for a local restaurant. Dial Directions demonstrated an iPhone app that eliminates the need for a keyboard.

www.nwdocfinder.com/6632

DEMO FALL '08:



Bringing single sign-on to the masses

Usable Security Systems' UsableLogin system is bringing strong passwords and single sign-on for Web sites to the masses through its browser plug-in technology.

www.nwdocfinder.com/6633

BEST OF NWW'S

NEWSLETTERS

IT pros with virtualization skills in high demand

Training and education: Virtualization skills are a hot commodity these days. "Virtualization's reach into nearly every corner of the data center is fueling the talent crunch," *Network World's* Ann Bednarz recently reported in our New Data Center series. "Virtualization calls for people who understand how to deal with complex configuration-management, patching and performance monitoring, for example." When there's more demand for a particular skill than supply, IT pros stand to rake in some cash. Right now, virtualization skills are about twice as valuable as the average IT skill, salary research shows. **www.nwdocfinder.com/6628**

Network management: Start-up vendors looking to grab some of the management software spotlight at VMworld 2008 this week recently released free software downloads designed to help IT managers track and search data on virtual machines (VM). Embotics, which dubs its technology VM lifecycle management, released a scaled down and free version of its flagship V-Commander application. Called V-Scout the no-cost download helps IT managers generate reports from data dispersed across their virtual environment. Using no agents, the centralized management application complements V-Commander's policy-based management capabilities by delivering data that can help IT managers associate costs to VMs and determine how VMs have changed over time. **www.nwdocfinder.com/6630**

Tech exec: What does it take to rank among the top 50 companies on the Inc. 5000 list of the fastest-growing private companies in America? It takes great information technology. Brian Morgan, director of IT at Interbank FX, concurs. IBFX is a leading provider of online foreign-exchange trading services, serving clients from more than 140 countries. Business magazine gives IBFX the title of No. 1 growth company in the state of Utah. To reach and sustain that level of growth, the IT systems need to be able to grow and adapt rapidly to the company's needs. This is one of the reasons Morgan and his IT team selected a software-as-a-service offering from Service-now.com as the company's IT service management platform. "Service-now.com helps us provide better uptime for our systems than we could if we hosted an application ourselves," says Morgan. **www.nwdocfinder.com/6629**

When your company is on one network, it can be truly flexible. Expand, move or merge. And do it faster on a single IP network. Sprint Converged Solutions lets you access your voice, video and data instantly on one network, built end-to-end with technologies that have the Cisco Quality of Service certification. So you have the flexibility to adapt to whatever the future brings. Get it on the Now Network.™
sprint.com/business
cisco Powered
Sprint

Microsoft-Novell partnership yields virtualization bundle

Microsoft and Novell released a virtualization bundle that represents the pair's first fully supported joint product since their historic interoperability partnership was forged in 2006. The two have configured and optimized Novell's SUSE Linux Enterprise Server to run as a guest operating system on Windows Server 2008 Hyper-V. The product is the first to include technology developed by both vendors at the Microsoft and Novell Interoperability Lab they opened just over a year ago in Cambridge, Mass. Experts say user interest in integration of virtualization wares is growing, but actual use is far from a tidal wave. **www.nwdocfinder.com/6642**

Cisco package targets teleworkers. Cisco is announcing a bundle of gear and services aimed at helping companies design and install remote-site communications that replicate the connectivity workers have when they're located in corporate sites. Called Cisco Virtual Office, the package includes IP phones and multiservice routers to be placed in home offices or branch offices and linked to corporate headquarters. CVO also includes gear to support the remote sites from headquarters. Design and implementation services, along with remote management and security-optimization services, round out the package. CVO can be implemented for $700 to $1,000 per seat for 250 users, Cisco says. **www.nwdocfinder.com/6643**

SAP certifications boosting pay, but others still falling. Many IT skills continue to lose value as others increase, according to new data from Foote Partners. The research firm reported that while pay for SAP skills increased by 25% to 30% over the past 12 months, pay for other certified skills declined. IT certifications with the largest market value declines include Microsoft Certified Professional+Internet (MCP+I) with a 40% decrease and LAN Server Engineer (LSE) certifications with a 33% drop. On the plus side, pay for noncertified wireless network-management skills increased by more than 33% over the past 12 months and pay for noncertified network-security management grew by more than 36%. **www.nwdocfinder.com/6644**

Experts make case for IPv6

The co-authors of Global IPv6 Strategies *were the guests for a live* Network World *chat where they discussed all things IPv6. The group included Bechel's Fred Wettling, who is also a member of the IEEE North American IPv6 Task Force and the IPv6 Forum; Patrick Grossetete, who is technical director of product management at Arch Rock, maker of IP-based wireless sensor network technology; and Ciprian Popoviciu, a technical leader at Cisco.*

Layer8: RFC1918 provides more than ample IP space for the largest of enterprises, outside of ISPs and service providers. What would be some compelling reasons to adopt IPv6 as an internal IP architecture?
Chip_Popoviciu: Yes, RFC 1918 address space was sufficiently large for most of the needs of today's enterprises, but that might not be the case going forward. Enterprises have layered services (data, voice, wireless, etc.), each with an addressing scheme. These layers will take significant resources. Then we have the new devices coming into the environment — sensors, readers, security devices. All these elements can make RFC 1918 insufficient for future needs.

bruce.curtis: We have enabled IPv6 for all of the clients on our networks and are working on some issues with load balancers, etc., for our servers. I see signs that ISPs are moving toward enabling IPv6 but other than Google, I don't see many destination sites enabling IPv6. Do you see more destination sites preparing for IPv6 than I have seen?
Chip_Popoviciu: Availability of Internet content over IPv6 is indeed a challenge and it makes offering IPv6 based IA services difficult to justify. That does not mean, however, that deployments are gated by the availability of Internet content. There are walled-in-garden deployments that offer specific IPv6 services that can be managed within that domain. Migration of content to IPv6 will depend a lot on demand, and that is a way to stimulate content providers to put content on IPv6. Also, there is work being done in IETF to provide mechanisms that will encourage providers to put content directly on IPv6 but make it available to IPv4 users as well. Work in progress, to be sure.

mikes: How prepared are the support organizations for this? Will all the CCNAs be up to speed? And when? Orgs will never change if the support function is not in place.
Chip_Popoviciu: This is an excellent question, and touches on a topic sometimes overlooked. It is not easy or cheap to find IPv6-qualified folks, and a significant investment will be needed in preparing the staff for deploying and operating IPv6 environments. There are many courses available for IPv6 education, and the certification tracks are catching up. CCXX certifications do contain IPv6 modules now. Cisco engineers in all organizations including customer advocacy have gone through IPv6 training.

ipv6_novice: How much training is required for an IT force to migrate from IPv4 to IPv6 once they are convinced?
Fred_Wettling: You need to address all parts of the IP organization in your training and awareness efforts. The level of education will depend on the employee's role. Application developers need to be educated and their development environments to be IP-version agnostic. The quality-assurance environment needs to be IPv6-enabled. Support people need some basic awareness training. Security will be involved with IPv6, too.

Check out our full transcript of the chat online at www.nwdocfinder.com/6641.

IEEE readies launch of gigabit Wi-Fi project

BY JOHN COX

The IEEE working group that is putting the finishing touches on the 802.11n 100Mbps wireless LAN standard is about to launch a new project, for a 1Gbps WLAN standard.

That would mean gigabit Wi-Fi.

Last year, group members formed the Very High Throughput (VHT) Study Group to explore changes to the 802.11 WLAN standard to support gigabit capacity. The study group is looking at doing so in two frequency bands, high-frequency 60GHz for relatively short ranges and under-6GHz for ranges similar to today's WLANs in the 5GHz band, 802.11a and 802.11n.

At a meeting last week in Hawaii, the study group looked to finalize a proposal that would create a new task group to carry forward the work of crafting a standard. That proposal must be accepted by the 802.11 Working Group, which oversees the entire WLAN standard.

"The basic idea right now, and that's subject to change, is that the 'maximum mandatory mode' on a single link would be [at least] 500Mbps," says Tushar Moorti, director of systems architecture for chip maker Broadcom's WLAN Business Unit. "But the further requirement is that [an access point] device that supports VHT would be able to sustain multiple links, so the aggregate would be over 1Gbps."

Currently, WLAN products based on the draft 2 802.11n standard typically are providing throughput of 130M to 150Mbps, sometimes as much as 170Mbps.

"We'll see a [VHT] standard in two years, and WLAN products with more than 1Gbps within three years," says Craig Mathias, principal for Farpoint Group, a wireless consultancy. "That is absolutely phenomenal."

That may be optimistic. One version of the IEEE proposal suggests a completion target date of 2012-2013 for the standard. But a lot of big players have been active in the study group so far: Atheros, Broadcom, Intel, Marvell, Motorola and Nortel.

"It's the next-generation technology for wireless LAN, in the same sense that 11n was the follow-on to 11abg," Moorti says.

According to the proposal, VHT "will allow a corporate or home user to roam from high-throughput dense cells to wider area networks in a seamless manner, while maintaining full support for the installed base security, management, diagnostics and backbone infrastructure." VHT will also be backward compatible with the full range of existing and emerging 802.11 standards, such as 802.11i for security, and 802.11s for mesh networking.

There are existing gigabit wireless Ethernet radios, notably from vendors such as BridgeWave and DragonWave, which are used mainly for point-to-point links over several miles and for backhauling cellular traffic. But they aren't used to build WLANs.

High-capacity wireless links in the 60GHz band got a lot of attention early this year at the giant Consumer Electronics Show in Las Vegas, some of it with wireless products based on SiBeam's multigigabit wireless chip, which streams up to 4Gbps at up to 30 feet.

The VHT group has been considering the two frequency bands, for different reasons and possibly for different purposes. The group might propose developing the standard for both, treating them as complementary, Moorti says.

That makes sense to interested observers such as Proxim Wireless. "At this point, we're not sure whether or not the 60GHz band will provide enough range to support enterprise WLANs, but it is certainly worth exploring," says Ajit Jha, WLAN Product Manager at Proxim Wireless. "The 6GHz band is also worth exploring, since it provides the key benefit of backwards compatibility with existing 802.11 a/b/g/n WLANs."

The 60GHz band has a lot of unused spectrum available, and the VHT advocates like it because it's well-suited for very high speed, single links. But because of the high frequency, the signal doesn't penetrate easily through walls and other obstacles, so the applications are likely to span very short distances, such as one or two rooms in a home or office, for example. "This technology is very nascent," Moorti says.

"It used to require all kinds of exotic silicon, but now you can do this in CMOS," Mathias says. "But because of the problem of radio propagation, you have to be very directional, and you need sophisticated antenna arrays."

The under-6GHz band has less available spectrum, so VHT advocates are looking at an array of methods, from advanced digital processing to more mature antenna technology, to dramatically boost throughput beyond 11n, Moorti says. "The under-6GHz band is about multi-user technology to improve overall network performance," he says.

One technique being considered is parallelizing data transmissions between a VHT access point and its associated clients. Today's access points share limited throughput and work with associated clients in serial fashion, Moorti says. Without parallel transmissions, even a VHT access point supporting 500Mbps would still be limited by that inherent serial transmission. "[But] if you can parallelize those guys, and send to them at the same time, each user gets the full 500Mbps," Moorti says. "All the traffic would flow at the full rate."■

InBrief

BizTalk gets surprise reprieve

Microsoft has reversed course on the fate of BizTalk Server, renaming the next version and setting a road map that calls for a major release of the middleware every two years. Microsoft says BizTalk Server 2009 is slated to ship in the first half of next year. In addition, the company says it will provide details on another new version, code-named BizTalk 7, in the early part of next year. The decision to continue developing the Microsoft middleware came as a surprise to some, as BizTalk was to be a launching pad for Microsoft's forthcoming "Oslo" technologies that include messaging, workflow and modeling tools. "I have not seen this big a reversal from Microsoft in a while," says Rob Helm, an analyst with independent analyst firm Directions on Microsoft. "They might be reluctant to yank what is now a fairly successful product for an unproven technology platform."

Vendors team on content-management interoperability

EMC, IBM and Microsoft have teamed to develop a specification that will let content management systems from different vendors interact, providing greater flexibility for enterprise customers. Using Web interfaces, a customer might use SAP's front end to access multiple back-end content repositories, or use Microsoft SharePoint to access data inside EMC's Documentum platform, for example. The new Content Management Interoperability Services specification is ready to be submitted to the Organization for the Advancement of Structured Information Standards, and it's expected to be ratified by the end of 2009.

IBM testing voice-based Web

IBM is testing a voice-based Web to make information accessible to users who may not be able to read or write, or who do not have access to the Internet. The "Spoken Web" project, currently being piloted by IBM's India Research Laboratory, aims to take advantage of the rapid proliferation of mobile phones in emerging countries such as India. Using technologies such as VoiceXML and HSTP, Spoken Web will enable local communities to create and disseminate locally relevant content, and interact with e-commerce sites using the spoken word over the telephone instead of the written word. It mirrors the World Wide Web in a telecom network where people can create and browse "VoiceSites" that have their own URLs, traverse "VoiceLinks", and conduct business transactions, according to IBM.

Why the FCC slashed reporting requirements

Here's why Verizon, Qwest are being cut slack

BY BRAD REED

FAQ

Earlier this month, the FCC issued a decision that exempted major telecom carriers such as Verizon and Qwest from collecting data and reporting on criteria such as service quality, customer satisfaction, infrastructure status and operating data. While this may seem like an obscure issue, many consumer groups have argued that it goes straight to the heart of how many consumers and businesses make informed and intelligent decisions about selecting telecom service providers. In this Q&A we'll give you an overview of why the FCC ruled as it did, how it will change carriers' reporting requirements and the different arguments both in favor and against changing these requirements.

What exactly is the FCC exempting the carriers from?

In 1990, the FCC began requiring major telecom carriers to file Automated Reporting Management Information System (ARMIS) reports on service quality and customer satisfaction information, as well as on infrastructure and reporting data. The goal of these reports was to ensure that carriers were not lowering their network qualities to make short-term profits under the FCC's new price cap regulation system, and also that they were spending sufficient money on infrastructure development. Thus, large telcos had to submit annual data to the FCC on criteria such as customer complaint volume and money dedicated to network improvement.

But as the FCC notes, the advent of technologies such as cellular and VoIP has made the scope of these reports outdated. With more VoIP providers getting involved in offering voice services, telecom companies such as AT&T, Verizon and Qwest have long argued that they alone shouldn't be required to provide customer satisfaction and quality data to the FCC, as it drains their financial resources and puts them at a competitive disadvantage with other voice providers. The FCC last week showed it was sympathetic to this argument and exempted Verizon and Qwest from reporting on these criteria. Earlier in the year, the FCC had issued a similar ruling exempting AT&T from reporting them.

Does this mean carriers will never again have to publicly report on their service quality?

Not exactly. In the first place, the FCC has mandated that the carriers still have to provide this information to the commission for the next two years. Additionally, many commissioners think the FCC should take this opportunity to overhaul the government's reporting requirements for all telecom providers, not merely the traditional big phone companies. As FCC chairman Kevin Martin put it, "even if some information is important to disclose publicly to help inform customers and ensure an open market, it needs to be provided by all the competitors."

Wouldn't it have made more sense to simply amend the reporting rules to include all relevant Internet and voice providers rather than just exempt the telcos and then revisit the matter later?

Well, yes. But the way the rules are currently set up, the FCC had to issue some kind of ruling on the telcos' forbearance requests by a certain date or the requests would have been "deemed granted." In other words, if the commission had made no definitive judgment by the end of last week, the telcos would have gotten precisely what they wanted without preconditions.

Commissioner Jonathan Adelstein called eliminating the requirements before creating new ones "putting the horse before the cart," but also said that it's "far better than immediate and precipitous elimination of all the rules." Commissioner Michael Copps made a similar statement as Adelstein and said the compromise gave the commission an opportunity to "do what it should have done a long time ago, which is to revise and update its reporting requirements."

However, having an opportunity to rewrite reporting regulations is no guarantee that anything will actually happen. The FCC has a mere two-year window to keep the big telcos reporting their customer satisfaction and service quality data, and Commissioner Deborah Tate has already signaled that she might oppose any reinstatement of the rules for either the big telcos or their competitors in the wireless and VoIP industries.

What have consumer protection groups had to say about this?

Chris Murray, senior counsel at Consumers Union, has publicly taken a stance in line with Adelstein and Copps, and has said that the data provided to the FCC is an important component of customers' decision-making process.

"There's no way for consumers or regulators to know whether network quality is declining except for data like these," he told *The Wall Street Journal* last week. "They're saying throw out the rules and figure out if we can fill in the gaps with something else later."

The National Association of State Utility Consumer Advocates also opposed easing the rules on the telcos and filed a petition with the FCC stating that it would be inappropriate for the commission to grant relief from the reporting rules to companies such as Qwest and Verizon when the relief granted to AT&T earlier this year is still under appeal. In explaining his group's filing, NASUCA telecommunications head David Bergmann told *The Washington Post* that he was worried that "standards almost inevitably get lower" every time the FCC eliminates reporting requirements.■

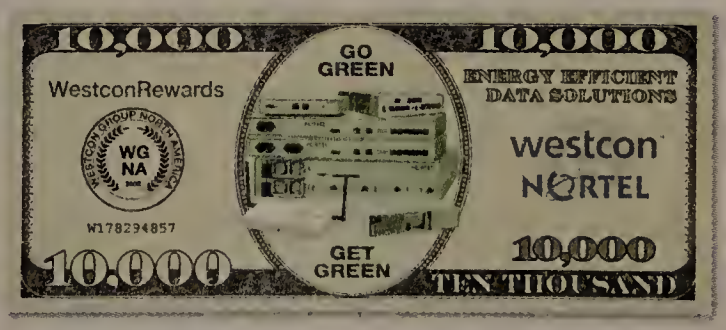
WIDE-AREA NETWORKING
Subscribe to our free newsletter:
www.nwdocfinder.com/1025

Go Green with Nortel

Get Green from Westcon

Claim your share of over $40,000 in prizes when you purchase Nortel products and energy-saving data networking solutions from Westcon.

From July 1 to December 31, 2008, every dollar you spend on Nortel products through Westcon gets you closer to winning your choice of incredible prizes including Apple MacBooks, Canon MiniDV camcorders, Samsung 52" LCD TVs, MarketVision services, Global Knowledge training and Nortel demo products. All prizes will be randomly drawn from ballot cards, so your chances of winning get better with every purchase.



Win up to $10,000 in WestconRewards.

NORTEL
Authorized Distributor

westcon™
a Westcon Group company

© 2008 Westcon Group North America, Inc. All product names are trademarks of their respective companies. Nortel, the Nortel Authorized Distributor logo, and the Globemark are trademarks of Nortel Networks.

convergencepoint
COMMUNICATIONS SOLUTIONS

1-877-779-3342

westcon.com/gogreen

Cisco pushes 'network memory'

Load balancing, caching technologies coming to routers/switches in 2009

BY JIM DUFFY

A Cisco engineer has concocted a way to scale router and switch performance through more efficient memory utilization.

Sundar Iyer

Sundar Iyer began exploring the topic during his doctoral work at Stanford University on "network memory" — alleviating performance problems caused by router memory access and storage bottlenecks in 10/40/100Gbps networks. Iyer then co-founded Nemo Systems in 2004, where he was CTO and principal architect, and Nemo was acquired by Cisco in October 2005.

Nemo's network memory algorithms will be implemented in 27 Cisco product instances slated for commercial availability in 2009 or early 2010, Iyer says.

The problem occurs in high-speed networks, including the Internet backbone. Packets arrive on routers much faster than commodity memory can support.

"Systems have to handle hundreds of thousands of tiny packets stored and accessed from memory at very high speeds," Iyer says.

On a 10Gbps link, for example, packets can arrive approximately every 50ns, while commodity memory — for example, dynamic RAM (DRAM) memory — can only be accessed once every 50ns. Packets can also arrive in any order and require unpredictable or random access to memory.

Yet it takes two memory operations per packet every 50ns on a 10Gbps link: one to write the packet, another to read. If the memory can only do one operation every 50ns, it can't keep up; and as link rates increase, the router vs. memory performance gap widens, and the problem only becomes worse.

The result is that routers cannot support the needs of real-time applications such as voice, videoconferencing, multimedia and gaming that require guaranteed performance, because it cannot ensure that packets can be written to or read from memory on time, at high line rates.

But adding memory capacity in the form of specialized 10Gbps static RAMs (SRAM) or reduced latency DRAMs is "extremely high in cost and unwieldy" in the number of components and power required per system, Iyer says. SRAMs and DRAMs also are unable to keep up with 40Gbps rates, he says.

Moreover, they may not alleviate virus attacks that can infiltrate a system based on the packet memory management pattern. If attackers figure out this pattern, they can repeat it over and over, causing router or switch memory to be overwhelmed.

The solution, according to Iyer, is network memory algorithms that combine load balancing and caching algorithms on commodity memory. Load balancing distributes the load over slower memories, and guarantees that memory is available when data needs to be accessed; caching guarantees that data is available in cache memory 100% of the time.

"They provide hard guarantees, mathematical guarantees that performance would never fail," Iyer says.

Applications for network memory include buffering, NetFlow accounting and QoS.

For buffering, routers must make sure that the packets it needs are always in the cache. With a small SRAM cache inside a packet processing ASIC and a slow commodity DRAM, it is possible to build a huge, fast, low-power packet buffer using network memory algorithms, Iyer says.

For QoS, network memory enables routers to better provide strict performance guarantees for critical applications, such as remote surgery and supercomputing. And they help maintain state for applications such as NetFlow, which collects IP traffic information for monitoring purposes.

Network memory techniques are currently being designed in Cisco's next-generation port speeds of 10G and 40Gbps, Ethernet switches and enterprise routers, Iyer says. They are also being designed into the company's next-generation 100Gbps router line cards, he says.

In addition to making memory more efficient and enhancing router performance on high-speed links, the algorithms reduce board-space real estate by reducing pin counts on packet processing ASICs, and reducing the number of on-board ASICs, Iyer says. That approximately halves the physical area to build a router line card, leading to considerable reduction in power requirements for high-speed systems, he says.

Still, network memory technology will need to continue to evolve as routers become faster and more complex, and memory requirements attempt to keep pace with new applications designed to harness higher speeds, Iyer notes. This will require continued improvement and innovation in caching and load balancing technology, he says. ■

Kace acquires application virtualization technology

BY DENISE DUBIE

Systems management vendor Kace Networks announced last week it had acquired for an undisclosed sum the intellectual property and principal engineers of Computers In Motion, a small company focused on application virtualization technology.

The buy gives Kace an entry into a market where heavyweights such as Altiris (now part of Symantec), Microsoft and VMware have been focusing recent efforts. Computers In Motion developed a handful of products including Avispa, which allows individual applications to be imaged into a container. According to the company, applications running with a container share resources with the system but don't change the underlying system. This application virtualization technology appealed to Kace, according to CEO Rob Meinhardt.

"Application virtualization technology is a must-have if you are a systems management player," Meinhardt says.

Kace will use VMworld 2008 to showcase its plans to integrate application virtualization into existing systems management wares. According to Kace Senior Product Manager Bob Kelly, application virtualization will help systems administrators reduce management tasks, licensing confusion and security concerns from users visiting Internet sites.

"For Computers In Motion, the acquisition gives its engineers the opportunity to continue evolving Avispa and other products such as SafeContainers and Take Control. SafeContainers creates a virtual sandbox to isolate Internet Explorer from the computer it is running on, preventing any downloads or files from altering the Windows registry settings and keeping the installation clean and safe. Take Control is an integrated set of Windows tools that control, fix and monitor in real time processes, threads, services ports and more. Another product, a Java GUI development tool dubbed Foam, will be discontinued.

"It's technology we have been working on for many years, and Computers In Motion didn't have the resources to take it across the finish line," says Mark Wright, chief architect at Computers In Motion. "Clearly Kace has a shared vision of what the technology can bring to the market." ■

ALTERNATIVE THINKING ABOUT SERVER MANAGEMENT:

Virtual connections keep you ready for virtually anything.

The HP BladeSystem c-Class helps free I.T. from the cycle of server management. It's equipped with HP's exclusive Virtual Connect Architecture, which virtualizes your LAN/SAN settings, so you only wire once and can make network changes on the fly. This drastically improves efficiency and service levels and gives you the time to focus on the things that really drive your business.

Technology for better business outcomes.

HP BladeSystem c3000
Featuring efficient
Quad-Core AMD Opteron™ processors.

HP BladeSystem c7000
Featuring efficient
Quad-Core AMD Opteron™ processors.

AMD Opteron 64

To learn more, call 1-888-860-9573 or visit hp.com/go/BeReady46

AMD, the AMD Arrow logo, AMD Opteron, and combinations thereof, are trademarks of Advanced Micro Devices, Inc. The information contained herein is subject to change without notice.
© 2008 Hewlett-Packard Development Company, L.P.

Dell targets under-performing VMs

66 virtual machines on one box, Dell promises

BY JON BRODKIN

Dell sharpened its focus on virtual environments last week, announcing a broad set of services and hardware designed to optimize storage and server virtualization.

New AMD-based blade servers and an iSCSI storage-area network (SAN) address a performance problem that occurs in highly virtualized environments, namely that loading too many virtual servers onto a single piece of hardware puts stress on memory and network bandwidth, slowing everything down.

"It's like putting too much weight on the back of a pickup truck," says analyst Charles King of Pund-IT.

The new Dell EqualLogic PS5500E is an iSCSI SAN array that doubles the density and triples the capacity over previous versions, going up to 576TB in a single management interface.

Dell's PowerEdge M905 blade server offers four sockets, compared with one or two in previous generations, King says. Dell says the M905 can support 66 virtual machines. According to King, performance on a typical server can slow down even if it holds just a dozen virtual machines.

Increased memory capacity is a key factor, King says. Standard one- or two-way servers top out at 16GB or 32GB of memory, while Dell's new box goes up to 128GB, he says.

Dell also released a two-socket blade called the PowerEdge M805, but says it holds more dual in-line memory module slots than previous two-socket machines. Later this month, Dell will update its Intel-based PowerEdge R900 rack-mounted system with six-core processors and embedded hypervisors.

Increased bandwidth and performance is also coming with new 10G Ethernet and 8GB Fibre Channel switches, Dell says.

On the storage front, Dell announced an EqualLogic iSCSI SAN array that doubles density and triples capacity, going up to 576TB with a single management interface. The EqualLogic PS5500E can be used to consolidate business data and applications such as file services, databases and virtual server environments, Dell says.

The array also enhances data protection for virtual storage with a feature that integrates EqualLogic snapshots with VMware's hypervisor, providing faster online backups and restorations of virtual machines and file systems. This feature will be available this month as a free download to customers who have support contracts.

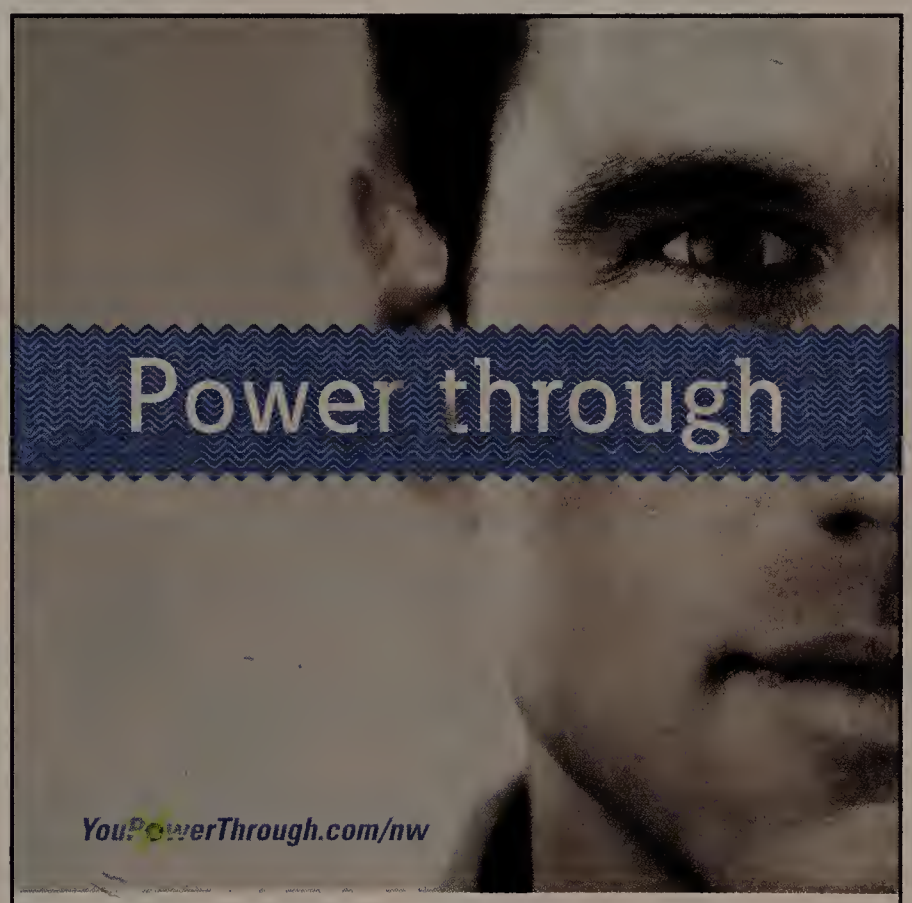
Dell's goal is to integrate storage and server virtualization, says Praveen Asthana, storage marketing director. The PS5500E starts at $78,000.

"It's not enough to offer storage, you need to integrate as much as possible," he says.

Dell's blitz of new products came a few days in advance of VMworld, an annual virtualization industry event hosted by VMware that kicks off in Las Vegas this week (See story, page 20).

More pieces of the announcement include:

- Pricing for the PowerEdge M805 and M905 starts at $1,699 and $4,999, respectively.
- Integration with Microsoft virtualization technology, making Windows Server 2008 and Hyper-V available as a factory-installed option on PowerEdge servers. Microsoft's System Center Virtual Machine Manager also is available for PowerEdge servers.
- Integration of EqualLogic storage with Citrix XenServer, making it easier "for IT managers to create snapshots, clones and single client images."
- Infrastructure consulting services for Hyper-V deployments, involving assessment, design and implementation of the Microsoft hypervisor.
- Site Recovery Manager for VMware environments, involving consultancy services to prepare a disaster-recovery plan and help customers configure VMware's Site Recovery Manager software, which automates disaster recovery.
- Life-cycle management for VMware, a service involving design and implementation planning, proof-of-concept and configuration of VMware's life-cycle manager. ■



Eaton expertise in a UPS.

Uninterruptibility from Eaton® is an iron-clad promise, backed by a $13B global organization and a century-long heritage with power protection, distribution and management expertise. That expertise has grown to include the Powerware®

IT Buyer's Guides

Compare products and get up-to-date buying tips, market trends, best practices, tech primers and more on dozens of networking topics at:

www.networkworld.com/buyersguides

Start-up to smooth apps on VMware

BlueStripe Software aims to solve application visibility issues

BY DENISE DUBIE

A team of systems management industry veterans has launched a company and introduced technology that BlueStripe Software says gives IT managers the tools they need to track and optimize application performance in virtual environments.

BlueStripe Software, founded in June 2007, came out of stealth mode last week with the introduction of its flagship product, FactFinder. The software — this version designed specifically for VMware virtual server environments — will be on display at VMworld 2008, which is expected to draw some 14,000 attendees.

BATTLE OF THE BLUES

BlueStripe executives graduated from local rivals Duke University and University of North Carolina, which inspired the Research Triangle Park company's name and logo.

According to the start-up, FactFinder helps companies struggling to optimize application performance in a less static environment, such as those featuring both physical and virtual servers.

"Companies would like to have the flexibility to move transactional applications over to dynamic virtual servers, but the loss of visibility into where that application resides and moves really makes that tough," says Vic Nyman, BlueStripe COO and former CEO of configuration management vendor Relicore, which Symantec acquired in 2006. Nyman also held positions with IBM Tivoli software and Wily Technology, the application management vendor CA acquired in 2006.

"The loss of visibility is breaking the current management tools, and we've developed a technology that can manage the application wherever it goes, even if part of the application is on virtual systems, part on physical servers and even if part is tied to mainframes," Nyman says.

Upon installation FactFinder performs an automatic discovery of the application and its components. It then details all connections and dependencies of the application, benchmarking normal behavior to enable the software to detect when performance anomalies occur. Equipped with this knowledge, FactFinder can follow an application throughout a multitiered environment and enable effective performance monitoring and troubleshooting when problems do occur.

"Areas where the tools are still evolving range across the spectrum, but particularly important will be continuing work in areas such as root-cause analysis, capacity and performance planning, chargeback and automation in general," says Cameron Haight, research vice president at Gartner. "RCA is important because of the growing number of interdependencies — many of which are fluid or mobile because of the underlying virtualization technology, making the construction of potential fault paths more problematic."

Initially designed as a support tool targeted at application administrators, the software downloads to a desktop or a laptop for portable use. FactFinder also requires customers install its "service observer" component, a small service that runs in the operating systems of a few servers in the environment.

The service observer, which Nyman likens to a DLL (dynamic link library), passively collects data by watching the application request layers and gathering data to send to the console residing on an application administrator's laptop. This service sends a summary of statistics on the operating systems by using WMI when necessary and ESX Server by connecting to VMware VirtualCenter management APIs. This data helps the application administrator get a picture of application performance and track its movement to more easily detect potential bottlenecks and failures. "It's about managing the application wherever it goes," Nyman says.

BlueStripe Software initially self-funded its operations, but in December 2007 the management newcomer garnered $5 million in Series A funding from Trinity Ventures. Chris Neal, formerly of Wily, Oracle and NetDynamics (acquired by Sun in 1998), is CEO.

The management team located BlueStripe in Research Triangle Park, N.C. — which provides a clue to the origin of the start-up's name. According to Nyman, two executives graduated from Duke University and two others from rival University of North Carolina, inspiring the BlueStripe name and logo, which features the two college shades in "The Battle of the Blues."

"We have a great and intense sports rivalry existing in one company. It makes for an interesting social narrative here," Nyman says. ■

and MGE Office Protection Systems™ product families. Today the Eaton label is found on UPSs with the highest efficiency, smallest footprint, lightest weight, and easiest installation available to help you meet your power challenges—and ***power through.***

WEB APPLICATIONS

Subscribe to our free newsletter:
www.nwdocfinder.com/1024

IT budgets suffer more shrinkage, surveys shows

BY DENISE DUBIE

Industry watchers are once again lowering their forecasts for IT spending as enterprise IT buyers report they are cutting budgets and approaching future investments with caution.

Goldman Sachs last week released the results of its quarterly IT Spending Survey that polls 100 managers with decision-making authority at Fortune 1000 companies. The research firm adjusted its forecast for U.S. IT spending to 4% for 2008. That number is down from 6% in 2007, and Goldman Sachs attributes the shrinkage to IT buyers thinking about long-term investments.

"Tech's high correlation with the broader economy means that a deceleration in tech spending in 2008 appeared inevitable at the beginning of the year and seems even more pronounced as we enter" the second half of 2008, the report reads. "Our IT spending indices hit their lowest level of the year, indicating that macro concerns continue to weigh on spending expectations. Indices still imply mild growth, but clearly a downward bias."

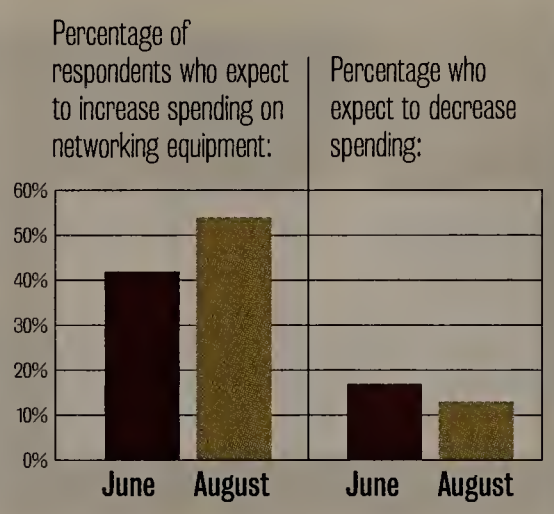
Separately Forrester Research reported that 43% of 950 senior IT managers polled have already cut their overall IT budgets in 2008 in reaction to the slow economy. Another 24% put discretionary spending on hold. Forrester's study found that 49% of U.S. companies polled are cutting budgets, while 31% of companies polled in Europe are doing the same.

"This is not an across-the-board spending slowdown; the impact of the economy on IT budgets varies widely by industry and geography," stated John McCarthy, Forrester vice president and principal analyst, in a press release.

But the research firms did find bright spots in spending plans. For instance, Goldman Sachs discovered a rebound in investing in networking equipment. The technology area had dipped to 42% of respondents expecting to increase spending in the firm's June survey, but jumped to 54% during this quarter. And the percentage of respondents expecting a decrease in network equipment spending declined to 13% from 17%. Specifically, spending for Cisco products shows positive signs, the research firm says.

Network rebound

More companies expect to increase their investment in network equipment than did a few months ago, according to Goldman Sachs' latest quarterly IT Spending Survey.



"In our August reading, 53% of respondents expect to increase spending on Cisco products in the next 12 months, up from 44% in June and within the 50% to 70% range that we consider healthy," the report reads. "Likewise the number of respondents who expect to reduce their spending on Cisco declined to 11% from 15%."

The quarterly research also showed that the percentage of survey respondents expecting to support the iPhone 3G within the next year had increased to 23% from 17% in June.

"Although Apple continues to score well in our survey as a PC share gainer, the 23% of the companies represented in our survey that expect to deploy the iPhone 3G is significantly higher than Apple's Mac position in the enterprise, which has remained below 1% over the past few years," the report reads.

IT services represent another bright spot for spending. Forrester found that despite budget cutting, many of those 950 IT managers polled intend to continue to invest in IT services. Forty-five percent of firms plan to increase their use of applications outsourcing, while 43% are increasing their use of infrastructure outsourcing. Another 43% indicated they would be moving more work offshore. ■

ONLINE: Network mgmt. event

The power of network management in general, and the influence of the network manager in particular, are rising. Today's network and IT professionals have an unprecedented opportunity to add more value to their company — and their careers. Learn what the most effective and efficient network-management tools are by attending IT Roadmap: Dallas on Sept. 23 for free. Qualify at:

www.nwdocfinder.com/5731

Net Buzz

continued from page 42

reporter has no idea how 'emphatic' she was or whether she made a 'plea' or a calculated political decision. The fact is, she asked her delegates to endorse Obama."

Phooey. Clinton's speech was indeed a plea (I watched it), and it was certainly most emphatic. Neither the word plea nor the word emphatic describes anything other than her verbal intensity and delivery style. Even a con man can deliver an emphatic plea (that's not a subtle dig at Clinton, by the way). Had the Times writer called the speech "heartfelt" or "sincere," we could talk about the unknowable — and bias.

A minor disagreement but key to my bigger point: Subjectivity and its evil twin, bias, are in the eye of the beholder more often than not. Neither software nor the wisdom of crowds can alter that fact.

The show's gee-whiz, hold-it-in-your-hands hit product was the Plastic Logic reader designed specifically for business users. It's the size of a standard sheet of paper, three-tenths of an inch thin and weighs less than a pound; yet it can be stuffed with thousands of documents in myriad formats that can in turn be read anywhere and annotated.

The unnamed reader won't ship until next year and pricing remains a mystery, but expect to see these babies popping on airplane flights — albeit in first class.

Usable Security Systems was there making a play for those Internet users who simply cannot keep straight all their myriad passwords — in other words, everybody. Its first service, UsableLogin, asks the user to remember only two things — a recognizable photograph and a simple, easily remembered "code word." The company takes care of all the serious security on the back end. Provided it holds up to the scrutiny of real security pros, it looks like the kind of thing I might give a whirl.

A company called Mapflow showed off an iPhone application that could redefine commuting and address the fact that "public transit goes from where we don't live to where we don't work." Described as a cross between public transit, carpooling and eBay, Avego uses GPS and smart phones to match drivers who have empty seats with fellow travelers willing to pay for a ride. I'm entirely too antisocial for this kind of thing, but I could see it catching on — especially when gas hits $5 or $6 a gallon.

Finally, a company called Cerego introduced its product called iKnow, which according to the DEMO show book, "empowers people to learn faster, remember longer, and manage their memory for a lifetime."

I meant to get over to their booth to learn more but I, uh, well — plum forgot.

In case you've forgotten where to send your comments, it's buzz@nww.com.

NEWS ANALYSIS

City hunts for mystery net device

BY ROBERT MCMILLAN, IDG NEWS SERVICE

With costs related to a rogue network administrator's hijacking of the city's network now estimated at $1 million, city officials say they are searching for a mysterious networking device hidden somewhere on the network.

The device, referred to as a "terminal server" in court documents, appears to be a router that was installed to provide remote access to the city's Fiber WAN network, which connects municipal computer and telecommunication systems throughout the city. City officials haven't been able to log in to the device, however, because they do not have the username and password. In fact, the city's Department of Telecommunications and Information Services (DTIS) isn't even certain where the device is located, court filings state.

The router was discovered on Aug. 28. When investigators attempted to log in to the device, they were greeted with what appears to be a router login prompt and a warning message saying "This system is the personal property of Terry S. Childs," according to a screenshot of the prompt filed by the prosecution.

The disclosure is the latest turn in a bizarre story that has made headlines in San Francisco for the past two months. Childs, a network administrator with DTIS, was arrested June 12 on charges of network tampering after he refused to provide his superiors with administrative access to the city of San Francisco's network, which he had managed for the past five years.

Initially Childs refused to hand over administrative passwords to the city's routers, which had been set up to wipe out all configuration information if they were reset.

After a dramatic jailhouse meeting with San Francisco's mayor one week after his arrest, Childs handed over the data, but DTIS Chief Administrative Officer Ron Vinson said last week that the city now expects to spend more than $1 million to clean up the mess. DTIS has paid $182,000 to Cisco contractors and $15,000 in overtime costs, he said in an e-mail interview.

The city has also set aside a further $800,000 to address the problem. Vinson did not specify what the additional money was expected to cover, but if the city has to hire network consultants to remap, reconfigure and lock down its network, this would not be an unreasonable estimate. The city has also retained a security consulting firm called Secure DNA to conduct a vulnerability assessment of its network.

Meanwhile, Childs remains in county jail, held on a $5 million bond. His supporters say he is a dedicated city employee who was pushed too far by incompetent management, while the county's district attorney argues that he concealed a violent criminal past when hired by the city and remains a threat to the city's network. Childs served prison time following a 1983 robbery conviction, a fact he concealed in his city job application forms.

In court filings, prosecutors say Childs has not provided passwords to city-owned encrypted hard drives or access to two Corsair Flash Survivor USB drives that may contain sensitive information.

In a report filed before the city disclosed the hidden router, a court-appointed expert witness for the defense wrote that DTIS could easily prevent Childs from accessing the networks.

"I have seen no evidence that Mr. Childs is a 'computer hacker,' and by taking a number of simple steps, DTIS could block access by Mr. Childs to San Francisco networks," wrote Doug Tygar, a University of California, Berkeley computer science professor.

Childs' next court appearance is set for Sept. 24. If convicted, he faces up to seven years in prison. ■

Quality. Reliability. Value.

ATEN
Simply Better Connections™

The SMB Solution

KVM Switch built into LCD console

Secure: Two levels of password protection

Hot pluggable - No power down needed

CL1008/16M
17" 8/16-port LCD KVM for SMB

DOWNLOAD Explore the "V" in KVM. Get the free white paper.
CLICK www.aten-usa.com/nww nj.aten.com
CALL 888-999-ATEN (2836) ext. 8776 732-356-1703

VMware CEO to make public debut

VMworld keynote big opportunity to address concerns about VMware

BY JON BRODKIN

VMware has faced some rather public upheaval over the past few months: the departures of founders Diane Greene and Mendel Rosenblum, big drops in stock prices, and an embarrassing technical mistake that temporarily prevented customers from logging on to virtual servers.

On Tuesday, nevertheless, Paul Maritz, newly appointed president and CEO, will have his biggest opportunity yet to address public concerns about VMware and provide a road map for the future of virtualization. He'll be delivering a keynote in front of 14,000 attendees at VMworld in Las Vegas, and then will answer questions in a Q&A session.

"This is going to be his coming-out party, the first VMworld where Maritz will be taking center stage," says Charles King of the analyst firm Pund-IT. "It's critical for him to get out in front of the large customers and VMware partners and let them know the VMware ship is still on course, that they've still got a terrific product. It will be critical for him to outline what long-term strategy the company is following and what steps the company is taking to get there," he says.

Maritz will use his keynote to lay out VMware's major areas of focus and describe where the company is going in coming years, says Raghu Raghuram, vice president of VMware products and solutions.

VMware also will make about 10 formal announcements at VMworld and describe the major products it plans to release in 2009.

Highlighting these announcements will be a new management tool that encompasses all the virtualized servers and storage in a data center. VMware is referring to it as the Virtual Datacenter Operating System (VDC-OS) and positioning it as an operating system for the entire virtual data center rather than for a single server. VDC-OS will aggregate virtual servers, storage and network resources into a single management tool that serves up computing resources to applications, providing a better level of availability and scalability, according to VMware. In the event a single piece of hardware or software fails, the VDC-OS will automatically route traffic around failure points so that applications are not affected.

The VDC-OS will start shipping sometime in 2009, but VMware isn't saying exactly when.

Also in 2009, VMware will team up with partners such as Savvis, Verizon, AT&T and Rackspace to provide Web-based cloud services enabled by the VMware hypervisor. Say an enterprise is running out of space in its data center, and wants to move an application to the cloud – one of these third-party providers would host the application, and make the offsite capacity appear as a natural extension of the customer's in-house data center.

Virtualization has "barely scratched the surface of what's possible," Raghuram says.

Maritz, a former Microsoft executive, came on board in July after EMC-owned VMware fired Greene, its co-founder and CEO. Rosenblum, the company's chief scientist and Greene's husband, resigned two months later.

King, who was surprised Rosenblum stayed as long as he did, says customers shouldn't be concerned by changes at the top. Greene and Rosenblum led VMware from start-up to rock-star status; but when a company becomes a powerhouse, it faces a quite different set of challenges, he says.

"Executives leave companies on a very regular basis. It's part of doing business, frankly," King says. "The dismissal of Diane Greene was

See VMware, page 28

Vendors tackle virtual security

Technologies that promise to virtualize servers, applications and desktops also can introduce vulnerabilities, according to industry watchers and a handful of vendors hoping to address these threats with updated technologies at VMworld 2008.

Such vendors as Shavlik Technologies and Tripwire, along with such newcomers as Altor Networks and Catbird Networks, plan to use the conference to demonstrate products that can protect data, secure traffic and enforce policies in a virtual environment.

The timing might be right for these vendors, industry watchers say, as companies expand their virtualization deployments and begin to develop strategies for securing them.

"These types of companies are rushing to fill the security gap created by enterprises that rushed into virtualiztion with dollar signs in their eyes and security plans on the back burner," says Phil Hochmuth, senior analyst at Yankee Group. "Now that virtualization is emerging as more of an overall IT strategy, rather than just a server-consolidation and cost-savings measure, enterprises are starting to take an architecture-level view of how to secure these virtualized environments."

For its part, Altor will be previewing a new product dubbed Virtual Network Firewall, which is currently in beta tests at 20 customer sites including Revlon and scheduled for availability in October. This product will help customers concerned with the blind spots that crop up during inter-virtual machine traffic, Altor CEO Amir Ben-Efraim says. Another security risk, he says, occurs when virtual machines are dynamically moved via such tools as VMware's VMotion. Traditional firewalls that sit at the physical network layer could not spot or stop unauthorized traffic, but Altor's Virtual Network Firewall can follow virtual machines through the migration process and make sure policies intended for them are applied regardless of location, he argues.

Companies may not have been monitoring traffic at the access layer in the past, but if virtualization drives them to do so now, it will only benefit their environment, industry watchers say. "Virtualization adds a new layer to secure, and it is not surprisingly different from how security teams protected the physical infrastructure; but it does require them to understand the virtual realm and dive in deep enough to know what is going on in there," says Pete Lindstrom, research director at Spire Security.

Separately, Catbird will introduce updated features in the second generation of its virtual server-security offering. V-Security 2.0 includes role-based management features the company says will help virtual-machine managers divvy up tasks and restrict people from performing unauthorized ones. This release also includes a feature dubbed TrustZones that the company likens to firewalls in the physical world. These zones allow administrators to create groups and apply group policies, which will be applied to the virtual machines in the group or any added. The company says V-Security addresses security and compliance issues for enterprise IT managers.

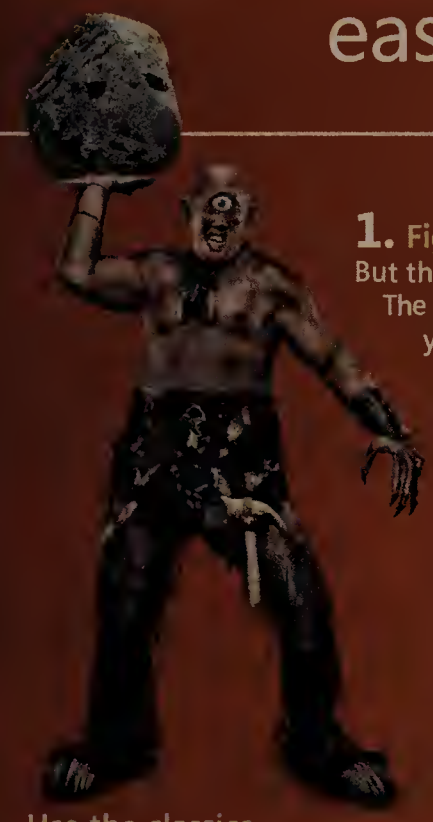
"Catbird combines a lot of different security-related features into one product set," Lindstrom says.

—DENISE DUBIE

Your potential. Our passion.

Microsoft

beating back a cyclops. easy.



1. Fight.
But there's no shame in running. The Cyclops plans to kill you, tear you to pieces, and eat you. Survival is job number one.

2. Use the classics.
A banana peel, strategically placed, is still hard to beat. Lure the Cyclops to his slippery doom, then run.

3. The flashlight gambit.
A bright light shined into his retina may blind him long enough to afford your escape. It might also just make him angrier, so be careful.

4. Give him an eye test.
Tell him he'll need a monocle, which you happen to have in the back room, then simply slip out the back.

5. Drive him to tears.
Start chopping onions; tell him it's for a batch of your award-winning chili. He'll be too bleary-eyed to fight.

beating back security threats. easier.

1. Implement Microsoft® Forefront.™
Forefront makes defending your systems easier. It's a comprehensive, simple-to-use, integrated family of products that helps provide protection across your client, server, and network edge. For case studies, free trials, demos, and all the latest moves, visit easyeasier.com

Forefront is business security software for client, server, and the network edge.

Microsoft®
Forefront™

Start-up bridges wireless spectrum

BY JOHN COX

Sometime after Oct. 30, you can expect a buyer and seller to get together on what could become the eBay of wireless spectrum.

That's the launch date set for SpecEx.com, which is billed as the first fully online, fully automated exchange for buying, selling and leasing spectrum licensed by the FCC.

The site is run by a start-up called Spectrum Bridge.The newcomer aims to bridge the gap between buyers and sellers in the secondary spectrum market, where the FCC has granted to some licensees the right to unbundle the spectrum they've been awarded and resell it, lease or even timeshare it.The company says it has received or been promised spectrum listings with a total current value of $250 million.

That could be just the beginning, because according to a number of studies and experts, the majority of licensed spectrum in the United States is unused or under-used at any given time. The FCC in recent years changed its rules to encourage a secondary market in spectrum, and easier leasing of larger amounts of spectrum. It's part of a shift in thinking by regulators, academics and business leaders. Having a more efficient mechanism for marketing spectrum could put this valuable resource to work in new wireless services, either by carriers and providers or directly by enterprises seeking private networking capabilities.

Until now, this market has relied on middlemen who cultivate industry contacts to find out what spectrum might meet a buyer's requirements, and what spectrum holders might be interested in selling.

Spectrum Bridge was founded in March 2007 by an executive team that had launched Mesh Networks (later bought by Motorola). They rounded up $2 million from investors including True Ventures; the Telecom Development Fund, which is funded by the FCC with interest collected from holding deposits for federal spectrum auctions; and Milcom Venture Partners.

Rick Rotondo, chief marketing officer and a co-founder of Spectrum Bridge, says the start-up estimates that well over 5GHz of spectrum is eligible for the secondary market, a huge amount."Most cellular carriers out there today have about 150MHz or less to run their entire business," he says.

One company with spectrum listed on SpecEx is Marcus Holdings of Cambridge, Mass. It's run by managing director Stephen

See Spectrum, page 40

Data leaks are a people problem

BY ELLEN MESSMER

Data-leak prevention that lets organizations monitor for unauthorized transmission of sensitive content is a powerful technology sometimes put to surprising uses. And those with DLP experience say the biggest challenges lie with people and their online habits rather than technology.

> "We're finding our traditional approach to blocking and limiting access needs to be re-examined."
>
> **Laz Montano**
> Assistant vice president for information security, MetLife

DLP technology, at the gateway or host level, is not difficult or time-consuming to deploy, according to IT managers gaining experience with it in business, government and school systems. Rather, DLP creates an atmosphere where network users may be caught committing various types of data violations, inadvertent or not. The IT department, though first to know, can't end up as the enforcement arm, experts say. Management of it comes from human resources and the legal department, and they have to be deeply involved to play the DLP police role. It all starts with creating the DLP policy.

"One of the lessons learned is get your policy in place first," says Charles Thompson, CIO for the city of Phoenix, which is installing the Fidelis Security Systems' DLP called XPS to prevent unauthorized transmissions related to city business.

Thompson can be counted as a DLP veteran after previously installing DLP in the Washington, D.C., and Orange County, Florida, school systems. He says years ago he learned that turning on a DLP system for content monitoring without a clear policy in place, which management understands and supports, is a misstep others would do well to avoid.

"You need the personnel department, human resources, legal and management involved," Thompson says, adding that it must be clear that they are to play a unified enforcement role when DLP catches policy violations.

It turns out that while DLP technology is fairly simple to deploy, getting policies and procedures to follow in the event of violations is not.

"There will have to be a lot of discussions about procedures, about what I call the 'scope of sequence,'" Thompson says. That means a clear definition of what a violation is, how different sorts of violations should be handled since all may not be equal in scope, and keeping track of repeat offenses.

In the Washington, D.C., and Florida school systems, schools not only watched out for prohibited sensitive content, such as student records as a privacy violation, or banned content like pornography or music; DLP also looked for evidence of cyberbullying using school-issued computers."Cyberbullying is one child threatening another, whether it's physical or mental abuse," Thompson says.

It turns out defining sensitive content is one of the hardest parts of DLP.

New York City-based Metropolitan Life Insurance Company (MetLife) is working on a DLP policy even as it evaluates three DLP products from Verdasys, WebSense and Symantec.

According to Laz Montano, assistant vice president for information security at MetLife, the insurance company plans to deploy DLP as one means to ensure customer information doesn't leak out across the Internet. But another driving factor is that business managers and executives are clamoring to be given much wider access to the Web.

"We're finding our traditional approach to blocking and limiting access needs to be reexamined," Montano says, noting the IT security department traditionally blocked much Internet access because of worries about malware.

But that era appears to be slipping away as MetLife's business people make use of LinkedIn and Facebook for leads and opportunities. And MetLife is finding that the Web is a place where information about insurance claims is readily divulged, with people even admitting to fraud.

While MetLife wants to give its employees far greater access to the Web for business

See DLP, page 40

SAVE THE DATE! Mark your calendar to attend

DALLAS | Sept 23 SAN FRAN | Nov 17 WASH. DC | Dec 16

GET READY TO GO FROM 0 TO 60 SOLUTIONS ON IT's Most-Critical Topics....

The IT Roadmap provided me with a huge amount of insight into upcoming trends in the technology industry. It also provided a great forum for me to ask questions and to receive direction on the latest and greatest tools to perform crucial IT functions. It was a day well spent.

CHRIS RAPP
ASST. VP / DIRECTOR OF TECHNOLOGY
SOVEREIGN BANK

Excellent Conference and Expo!!! Five Stars out of five. The information I collected in one day was "Priceless" and will keep me busy for months.

FREDERICK N. SPINGOLA
CIO & VP TECHNOLOGY
THE BENEFIT SERVICES GROUP, INC.

IT Roadmap Conference & Expo continues it's trek in 2008 with a nationwide tour including new cities, new topics, new speakers and new sponsors! That's right. You'll have a chance to attend one of the multi city events we'll be offering this year.

You won't want to miss out on 10 sessions of crucial network technology:

- **VIRTUALIZATION**
- **ENTERPRISE MOBILITY**
- **NETWORK AND APPLICATION ACCELERATION**
- **NAC: NETWORK ACCESS CONTROL**
- **DATA CENTER INFRASTRUCTURE AND MANAGEMENT**
- **SECURITY AND COMPLIANCE**
- **NETWORK MANAGEMENT, AUTOMATION & CONTROL**
- **VOIP, VIDEO AND UNIFIED COMMUNICATIONS**
- **NEXT GENERATION WAN SERVICES**
- **SAAS AND CLOUD COMPUTING**

Complete with case histories from front-line users. Data from industry researchers. Insights from IT specialists. And embedded within...a tightly-focused, solution-oriented expo of top vendors.

We look forward to seeing you at IT Roadmap!

Qualified Alumni are PRE-APPROVED

INTERESTED IN ATTENDING? INTERESTED IN SPONSORING?
www.networkworld.com/itr2008

ITRoadmap CONFERENCE & EXPO

Interop
continued from page 1

also expect close to 8,000 attendees, a 14% increase from last year. The event is collocated with complementary shows dedicated to mobile computing and Web 2.0 technologies.

In all, there will be more than 30 announcements at Interop, conference organizers say. Some of the others include:

- The FCC granting approval for Aruba Networks to use Software Defined Radio and Dynamic Frequency Selection technology in its 802.11n access points, which will enable access to otherwise prohibited 5.3GHz and 5.4GHz military radar channels, and software downloads to access points over the network.
- A release of Agito Networks' RoamAnywhere Mobility fixed-mobile convergence router for secure voice over wireless LAN, dynamic least-cost routing, and broadened support for PBX and Symbian and Windows Mobile handsets.
- GigaVUE-2404, a high-density network monitoring device for 10Gbps networks from Gigamon Systems.
- Ipanema Technologies' introduction of the Intelligent Acceleration system, which accelerates and guarantees the performance of WAN business applications.

Network switching, nonetheless, is where a lot of the action will be.

Leading the pack will be Foundry, which will unveil a switching line for small-to-midsize businesses, branch offices and distributed enterprise workgroups, plus stackables and stacking upgrades for existing switches.

Foundry's entry begins with the FastIron Workgroup Switch (FWS), a line of 1RU fixed-configuration fast and Gigabit Ethernet access devices. FWS features eight versions of 24- and 48-port switches, with 10/100Mbps or 10/100/1000M interfaces, including four gigabit uplink ports. Four of the models support Power over Ethernet (PoE) for VoIP and unified-communications applications.

Enterasys' SecureStack C3 switches are designed for Gigabit and 10 Gigabit Ethernet access at the network edge.

Foundry's FastIron Workgroup Switches boast energy efficiency and the ability to be upgraded to Layer 3 functionality.

Embedded security features include DHCP snooping and dynamic Address Resolution Protocol inspection to thwart denial-of-service attacks; user-based policy deployment via IEEE 802.1X; and Foundry's IronShield 360 multilayer security architecture for monitoring and intrusion detection and prevention, sFlow-based behavior analysis, and network-access control.

For energy efficiency, the FWS switches consume less than 35 watts per 24 ports, Foundry says.

The FWS switches also can be upgraded to Layer 3 functions, Foundry says. They cost $1,200 to $3,700.

Foundry also is rolling out two new stackable switches at the show, as well as a stacking option for existing switches. The FastIron GS-STK and LS-STK stackable switches come in 24- and 48-port models — the GS line supports PoE. The switches support 40Gbps of stacking bandwidth per unit.

Foundry competitor Enterasys will roll out a new stackable line that features integral 10Gbps Ethernet ports, IPv6 support, and increased bandwidth and throughput vs. its earlier stackables.

The SecureStack C3 is designed for Gigabit and 10G Ethernet access at the network edge with automatic discovery, classification and prioritization of IP telephony, high-definition videoconferencing and business-intelligence analytics traffic. The C3 line features optional 15.4 watt IEEE 802.3af PoE for wireless access points, VoIP telephones and IP security cameras, along with identity-based policies to help assure service-level agreements and prevent security incidents based on user- and application-access privileges.

In a stack of eight, the C3 supports a maximum of 384 10/100/1000Mb copper ports with PoE, 192 gigabit fiber ports and 16 10Gbps connections, Enterasys says. IPv4, IPv6 and IP Multicast routing are supported as well.

The switches feature 571.2 million packet/sec of throughput and 1.54Tbps of bandwidth. By contrast, Enterasys' previous top-end stackable, the SecureStack C2, featured 1Tbps of bandwidth and 285.7Mbps of throughput.

Eight hardware-based QoS priority queues are available per C3 port with support for 16,000 Layer 2 media access control (MAC) addresses and 1,024 virtual LANs (VLAN), Enterasys says.

Pricing starts at $145 per port.

Moving from the stack to the data center, Force 10 will emphasize its software prowess at the show. The company is unveiling a new version of its FTOS operating-system software with network-management, security and power-efficiency enhancements.

The software extensions follow recent announcements by the company of a module for its C-series switches that combines copper and fiber Gigabit Ethernet interfaces with 10G Ethernet to offer port diversity on a single line card to help customers move from Gigabit Ethernet to 10G Ethernet; and integration of the C-series switches with IBM's System Cluster 1350 data center systems, including the System x iDataPlex.

This week's FTOS enhancements will build on those developments by delivering the tools that let organizations optimize their networks based on unique application and traffic requirements, Force10 says. The software automatically senses the power requirements of connected devices and provisions the needed amount using the Link Layer Discovery Protocol.

FTOS also now features more proactive monitoring of software and hardware faults, and notification of a problem before it affects the stability of a converged network.

FTOS includes security features that can be set and optimized by organizations. It can be used to authenticate and automatically assign users to pre-established VLANs based on predefined policies.

To support video on the network, FTOS enables network administrators to categorize and manage streaming, multicast and broadcast traffic. Additionally, FTOS is designed to protect the network from backdoor vulnerabilities that may be created by user configuration errors, and limits the number of recognized MAC addresses per port to prevent unknown systems from gaining access to the network, Force10 says. ■

NEWS ALERTS

Hate hunting for stories on a specific topic? Let the news come to you with Network World's latest news alerts with focuses on security, financials, standards, trade show news and vendor-specific news.

www.nwdocfinder.com/1002

Solutions | Collaboration | Delivery | Support | Billing

*A **service** model that lets us do more with fewer resources*

*A simple and attractive **invoicing** model*

Stova Wong, CIO, Paul Hastings
experiences serenity

At Paul Hastings, a globally-recognized law firm with 1,200 attorneys and 18 offices worldwide, timely and accurate communication of information is a 24/7/365 priority. Enter MASERGY, with a redefined approach to global networking. Through a passionate dedication to the customer experience, our proven IP MPLS network offers flexible solutions, responsive collaboration, seamless global delivery, proactive support and simplified billing. **And in the case of CIO Stova Wong, our unique solutions and billing models bring a welcome sense of comfort.**

Experience customer-focused global networking solutions

MASERGY
Global Networking Redefined

1.866.MASERGY | masergy.com

Life at 10 years AG (after Google)

NET INSIDER
Scott Bradner

There were many ways to search the Internet before Google came along, but none of them turned into a verb. These days, a big deal is being made of Google's turning 10 by a lot of the media. Most of the coverage has had a bit of an edge to it, as if people do not want to accept the success that Google has enjoyed.

This anniversary provides a good excuse to take a look back at where we came from. A few years ago, someone asked me what was my biggest surprise in what the Internet turned out to be, based on what I expected 15 years ago. My answer: "mom surfing."

Fifteen years ago the Internet was big — at least it seemed that way to me at the time — but the Web only just had been announced (in April 1993), and was yet to be seen as significant. There were Internet search tools around in 1993, however. Archie, Gopher and other tools searched and indexed FTP sites but were used mostly by geeks like me.

The idea that my mother would want to use such tools — or have any reason to want to do so — never occurred to me. The Web started the change that led to lots of people's moms now using this once geek-friendly environment, but it was the development of search engines that completed the change.

In 1993 there were a few hundred Web sites on the Internet. In two years the number had grown to tens of thousands, and by the time Google was founded, to more than 2.5 million. For comparison, there are well over 100 million Internet Web sites today (according to the usually unreliable numbers). This is about one-fifth of the number of Internet hosts.

Even with "only" a few million Web sites, finding things on the 'Net was next to impossible, so the need for something to index the sites was rather clear. Web crawlers and search engines started right when the Web did, and there were quite a few by the time the Google guys announced theirs. I remember using AltaVista quite a bit — it seemed like a bit of a wonder at the time. The wonder is still there, but most people no longer even think about what goes into providing the instant information-gratification that the Web has become.

What makes Google special? For most people it is not just the ability to search the Web. Yahoo and MSN do that just fine. (Just for giggles, I searched for myself as people are wont to do, and Google came up with 122,000 hits; MSN had 153,000, and Yahoo 352,000.) There are a lot of differences in what comes up on the first screen, but they all work quite well. It seems to me that what makes Google special is that the company never sits still. It seems as if new things are announced every day (the day I submitted this column, it was announced that Google has been indexing old newspapers in a bigger way). Google is a lot more than search these days.

Regular readers of this column will know that I do not much like Google's data-retention policies, although Google has just started to reduce data retention somewhat. But I do use Google, and it works well. It is also one of the reasons that lots of moms are not only surfing but also finding what they are looking for — and much more besides.

Disclaimer: Harvard knows that if you find only what you look for in an educational setting, then the setting has failed; but the university has not expressed any opinion on Google, the verb.

Bradner is Harvard University's technology security officer. He can be reached at sob@sobco.com.

ONLINE: More Google

Read our daily updates about Google at Network World's Google Subnet.

www.nwdocfinder.com/6638

Innovation in the crucible of war

EYE ON THE CARRIERS
Johna Till Johnson

Last week I wrote about the importance of innovation. That got me thinking about one of my favorite topics: technology innovation in the military.

Now, fostering innovation isn't a primary, or even ancillary, goal in most military organizations. In fact, a deep respect for tradition is core to the military culture. Militaries adopt technology only because they have to: If beating up the other guy with clubs were still effective, the world wouldn't have moved on to gunpowder.

So it's fascinating to see how quickly technical innovations can reshape even an organization that doesn't explicitly hold innovation as a goal. In a previous column, I mentioned the outstanding book *Intelligence in War*, by John Keegan, which focuses on how communications technologies can provide the competitive edge to combatants who are smart enough to use them. I've also mentioned Alexander the Great's effective use of the sarissa (new technology) and the phalanx (new organizational structure). The point there is that new technology often also forces new organizational structures — and adopting one without the other doesn't work.

Those of you who share my obsession will be pleased to hear there's another great book out: *War Made New* by Max Boot, which focuses on how technology has changed the military (and of course, history) from the late 13th century through the present. In doing so, he poses several intriguing hypotheses. For example, he makes the point that European military superiority in the 19th and 20th centuries is largely a result of the ongoing battles between nations and city-states from the 14th through the 18th centuries, which served as a crucible for technology innovation. By perfecting their technical skills against one another, the Europeans advanced far ahead of the rest of the world — kind of like the way many of the best comedians come from Canada (but I digress).

More broadly, another of Boot's hypotheses is that there are (or were) four significant "revolutions" in military technology: the gunpowder revolution, the industrial revolution (which he breaks into two, running through the late 20th century) and the information revolution, which is underway now.

Of these, he believes the information revolution is the most significant — in fact, he makes the provocative contention that the information is more significant than the advent of nuclear weapons. Even granted that he's using a somewhat dated definition of "information technologies" (wireless Internet access and e-mail), he makes some interesting and credible predictions. For example, he posits that new technologies are likely to empower small states and substate groups at the expense of large nation-states, a prediction reminiscent of Neal Stephenson's early-90s science fiction novel *Snow Crash*. And his analysis of the future of robotics and unmanned weaponry (including satellite-to-satellite warfare) is worth the price of the book by itself.

The real takeaway in all this? Innovative technology has a way of reshaping the organizations of people who use it — and that's true even in organizations that don't explicitly set out with innovation as a goal.

Johnson is president and senior founding partner at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

FREE

information

advice | news | tips

subscribe to Network World's FREE e-newsletters

Network World offers more than 50 technology specific e-mail newsletters, written by experienced editors and industry experts, offering the latest news, information, advice and tips directly related to particular topics, such as LANs, WANs, wireless, security, storage, convergence, linux and open source, data centers, and much more. You can sign up for any of our newsletters by going to www.networkworld.com/nlsub

NETWORKWORLD®

Microsoft sets virtualization plan

Key mgmt. offering pieces due this year, Hyper-V Server freebie on the way too

BY JOHN FONTANA

Microsoft last week fleshed out more of its virtualization story, outlining everything from management to migration — but leaving out some licensing details it may have to revisit.

The company said development of its System Center Virtual Machine Manager (VMM) is complete and the software will ship by year-end. VMM, which integrates with System Center Configuration Manager for provisioning and with Operations Manager for monitoring, is perhaps the strongest virtualization product Microsoft has in its growing arsenal. VMM helps users configure and deploy virtual machines.

The company also said the stand-alone version of Hyper-V — called Hyper-V Server 2008 — will be free when it ships in 30 days. Previously, Microsoft set the price at $28.

The move was seen as a reaction to VMware's announcement July 22 that its ESXi server is now a free download. Still, although they're free, neither version includes high-availability features, and that doesn't make them likely candidates for production deployments, experts point out.

In addition, one other important feature Microsoft needs to compete with VMware could take more than a year to show up. Live Migration, which lets users move virtual machines between servers with no downtime, probably won't ship for more than a year, Microsoft said.

Live Migration features will come in Windows Server 2008 Release 2. If Microsoft follows its release cycle established in May 2004 — that calls for a major operating system upgrade every four years with a lesser, R2 release in between — Live Migration won't come until 2010 at the earliest.

From a competitive standpoint, Microsoft cannot wait that long because it is in catch-up mode to VMware and Xen-based hypervisors, experts say. Critics of Hyper-V's predecessor, Virtual Server, often cite its lack of live migration capabilities as one reason it was not ready to support performance-sensitive or critical applications.

In addition, observers are encouraging Microsoft to review its virtualization licensing again. The company recently lifted a 90-day license-transfer restriction on server applications licensed under a volume license agreement, such as Exchange and SQL Server. But the move left out in the cold small-to-midsize companies that don't have those agreements.

"What is the point of lifting the restrictions just for volume licensing applications? Why not remove them for all applications?" says Chris Wolf, an analyst with the Burton Group.

Without the volume licensing agreement, users would be forced to buy a license for every node the server application runs on or may run on as part of a virtual machine that is moved around for high-availability or disaster recovery purposes. For a two-node cluster running two server applications, the user would need to have four licenses instead of two.

The same doubling-up on licenses is true for virtualizing the Windows operating system, which also does not fall under the policy that lifts the 90-day restriction.

Microsoft did not talk about application and operating-system virtualization licensing last week, but it did make one licensing announcement, saying the stand-alone version of VMM unveiled in July will be on Microsoft's price list in November at $675, which is a license per device and includes rights to the management server.

The license for the stand-alone VMM version, which has been unbundled from System Center Server Management Suite Enterprise, will be listed as the System Center Virtual Machine Manager 2008 Enterprise Server Management License. ■

ONLINE: Virtualization slide show

As VMworld kicks off, many vendors have updated their tools and technologies to take on virtual environments. Apani Networks, BMC Software, eG Innovations, Sun, Tripwire and Veeam Software are among the newsmakers.

www.nwdocfinder.com/6640

VMware

continued from page 20

a difficult thing, I think, for everybody involved.... [But] I think, frankly, Maritz is a great fit for the company right now."

Maritz is an "excellent marketer" who had a lot to do with the success of Windows, says independent IT analyst Laura DiDio.

Maritz's new battleground pits him against Microsoft and other budding virtualization vendors, such as Citrix Systems, Oracle, Virtual Iron Software and Sun. VMware's competitors typically offer cheaper prices, but it's generally agreed the company still has the most robust server virtualization technology.

"They have the advantage of starting out ahead [of competitors]," says VMware user Mitch Dysart, the IT director of operations and chief technology architect at Ohio State University (OSU). "I am very interested to see what they have in store for the future."

Pund-IT's King pinpointed VMware's focus on high-availability technology to create more resilient IT infrastructures, and said he expects a lot more work on this front.

Customers, however, probably have a long wish-list of things they want to hear from Maritz, in terms of both new products and insight on the next steps for virtualization, not only for servers but for storage, desktops, applications and networks.

"Maritz is going to be focused on the future of virtualization – getting out of the data center to the desktop and beyond," analyst DiDio says. "You're really talking about [computing in] the cloud."

OSU's Dysart wants to see better tools for cloning virtual machines. He also suggests that VMware work on software that lets virtual machines span multiple physical servers. Essentially, he suggests aggregating several physical boxes into one virtual machine for high-performance applications — the opposite of typical virtualization, which carves up one physical box into multiple virtual machines.

Dysart expressed concern about the pricing of applications that run on VMware servers. Software application vendors still don't have a uniform method of assessing licensing fees for software that runs on virtual instead of physical machines. This isn't the direct responsibility of VMware, but "they have a huge presence," he notes. "They might be able to come up with some sort of a template licensing agreement for the software publishers to follow."

Disaster recovery is on the mind of Rick Scherer, who oversees an extensive VMware deployment at the San Diego Data Processing Corporation, a nonprofit set up by the San Diego municipal government to provide IT services. VMware offers the Site Recovery Manager technology, but there's room to have more automation of the virtual machine recovery process, he says.

"We are planning the building of one of our disaster-recovery sites, and that would definitely make that plan a lot easier," Scherer says.

Reliability is also top-of-mind for some customers. Maritz was forced to apologize in August after a bug in a software update prevented VMware users from logging on to virtual servers. The bug fooled the software into thinking customers' product licenses had expired. He promised an internal review of VMware's quality assurance processes. ■

Your potential. Our passion.

Microsoft

MICROSOFT SYSTEM CENTER. **DESIGNED FOR BIG.**

Microsoft® System Center is a family of IT management solutions (including Operations Manager and Systems Management Server) designed to help you manage your mission-critical enterprise systems and applications.

Carnival Cruise Lines manages 1,000 shipboard and land-based servers with System Center. That's big. See Carnival Cruise Lines and other case studies at DesignedForBig.com

Microsoft®
System Center

The benefits of an open source SOA

BY PIERRE FRICKE

Service-oriented architectures are helping companies do everything from automate business processes to increase agility, but implementing the technology is not necessarily straightforward.

SOA requires the integration of many varied processes, applications and technologies that are difficult to mesh seamlessly, meaning incompatibility, scalability and flexibility issues often arise. The license-fee structure of traditional software also can limit options and add cost. Turning to open source technology can help alleviate these issues and accelerate deployment, as well as business adoption.

Open source has become a staple of enterprise-class IT as concerns about stability, security and support fall away. Open source is as stable, secure and well supported as proprietary solutions, if not more so. In addition open source SOA solutions provide:

- Simplicity — Open source solutions are easy to find and implement, with many architects and developers being familiar with the core mechanics of the technology. Open source developers are motivated by their communities to deliver easy-to-use frameworks and platforms.
- Openness — The flexibility inherent in open source allows for more freedom and personalization of the solution than proprietary offerings, and means that an organization will see more value relevant to its operations from the installation.
- Affordability — The open source subscription model makes SOA products less expensive than proprietary tool sets.

The benefits of open source SOA solutions can be realized in each of the six stages of the SOA evolution: 1) business process understanding; 2) IT assessment; 3) SOA design/determination; 4) SOA service enablement; 5) SOA integration and governance infrastructure; and 6) process orchestration/composition.

For the first three steps, work efforts are focused on the business processes, IT design and SOA design, and the open source subscription model offers a more affordable and flexible pricing structure than traditional SOA solutions. That helps the SOA design work proceed more quickly without concern about per-CPU license fees.

The advantages of open source solutions are particularly evident during the final three steps in the process.

In the fourth stage, SOA service enablement, organizations must determine how application and data services will be developed and deployed. Enlisting an open source application server and/or data-services platform gives great flexibility. While enjoying the same level of support and security as a commercial offering, architects and developers can more easily develop and deploy platforms that enable greater developer productivity and speed to solution. Additionally, the community model drives feature and quality requirements into these platforms that these architects and developers look for.

> An open source SOA platform allows for use of the widest range of current and future integration, messaging and component model technologies.

The fifth step of the SOA evolution is integration and governance infrastructure, the "glue" of the entire deployment that makes it work. Architects need to choose how services, applications and users will interact and communicate with one another. One major decision usually made in this stage involves the choice of an enterprise service bus (ESB), essentially the intelligent integration fabric in the SOA deployment.

Open source proves to be a good and affordable option. The flexible and scalable nature of the technology, from embedded installations to small or large installations, means if the scope or another criteria of the project suddenly changes, the key components of the open source SOA implementation (the ESB) will not have to be thrown away and reselected.

The final stage of SOA is understanding how business processes and rules will be developed and deployed using the SOA services and integration fabric. Process orchestration automates the workflow and business rules of the business process, bringing the SOA to life. Adopting an open source SOA platform that accommodates multiple integration paradigms — such as enterprise application integration technologies, ESB or event-driven architecture — provides additional flexibility and cost savings when it comes to business process automation because it helps ensure components can be reused.

An open source SOA platform allows for use of the widest range of current and future integration, messaging and component model technologies.

How do these benefits apply to a real-life example of an SOA implementation? A telecom company realized its existing billing and service-order management platform could not handle the processes required for more complex telecom services, and decided to use SOA to bridge the gap in data/process flow between its autonomous data sources and applications.

The company turned to open source tools for its SOA implementation, choosing an open source data services and SOA platform for the integration of the billing system. IT needed the flexibility and scalability of open source, as well as freedom from licensing costs, to be able to scale the implementation to accomodate its regional operations.

After deploying the open source solution, the company experienced an immediate, major improvement in productivity and a reduction in operating costs. The architect points to the open source solution as the reason, which now lets the company provision 80% of its orders automatically with little or no human intervention. The SOA also has reduced service provisioning time from weeks to minutes, increasing both user and employee satisfaction.

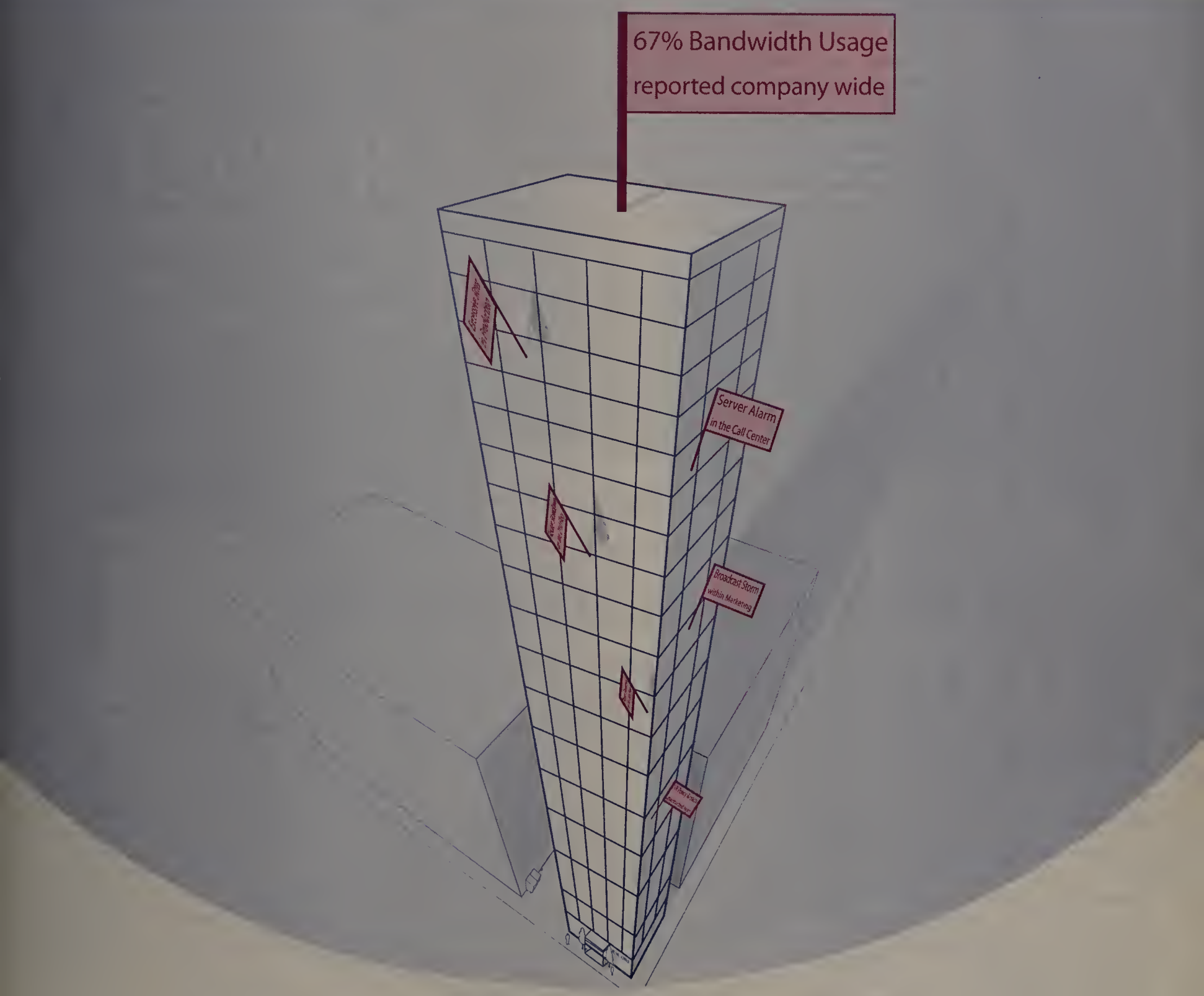
When considering an open source solution for SOA, remember the acronym also stands for Simple, Open and Affordable. These are the biggest benefits that open source brings to an SOA implementation. With a lightweight footprint, flexible and scalable architecture, and little to no cost associated with the technology itself, open source is a proven winner in enterprise deployments. Now it's time for SOA architects to realize how much open source has to offer to them.

Fricke is director of product line management, SOA products, Red Hat (www.redhat.com).

Got great ideas?

Network World is looking for great ideas for future Tech Updates. If you've got one, and want to contribute it to a future issue, contact Editor in Chief **John Dix (jdix@nww.com)**

Top-to-Bottom Reporting



Top-Floor Reports, First-Floor Detail.

Report network wide without sacrificing granularity, with the new Observer Reporting Server. Report by department or function to see how problems impact your business. Plan better with custom reports and trending. Drill into individual links or user data and interface flawlessly with Observer® and GigaStor™ for back-in-time analysis and rapid resolution. Enterprise-wide reporting with drill-down detail: now you can have it both ways.

Don't just report: Resolve.

NETWORK INSTRUMENTS®

For more information, call 800-526-5958

www.NetworkInstruments.com/resolve

© 2007 Network Instruments, LLC. All rights reserved. Network Instruments, Observer, GigaStor, and all associated logos are trademarks or registered trademarks of Network Instruments, LLC.

GEARHEAD

Mark Gibbs

Desktop virtualization for the enterprise

We interrupt our scheduled topic (a discussion of Web-browser stuff I started last week) to bring you an exclusive Gearhead review of a new virtualization product, vDesk from RingCube Technologies.

Virtualization has become, to say the least, big. Beyond server virtualization there's another enormous opportunity that is relatively underused in the enterprise world: desktop virtualization.

Most desktop virtualizing products are based on thin client technologies delivered from a data center server (for example, Citrix), or emulate the PC hardware environment of the client and run a virtual machine alongside the existing operating system (such as the VMware Player). These approaches both have drawbacks in terms of resource demands and support for mobile users. VDesk takes a different and less resource demanding approach by using operating system virtualization on the client and, to meet enterprise oriented management requirements, adds a sophisticated centralized management system.

I've discussed operating system virtualization previously so I'll just summarize the concept: Rather than creating a virtual hardware environment, OS virtualization makes a copy of the host OS interface so the virtualized environment can share the host OS, thus requiring less memory and sucking up fewer cycles.

The vDesk system is based on RingCube's MojoPac product, which lets you create a virtual desktop but lacks enterprise manageability. This new incarnation adds the vDesk Administration Server to provide just that. You access the administration server through a Web browser to define users and groups and their privileges, set and edit policies, create virtualized desktop images, and control distribution and availability.

VDesk policies let you control exactly what a specific user or group of users is allowed to do. For example, you can prohibit toggling between the virtual and the host environment, disable importing and exporting data, disable clipboard sharing between environments, set licensing terms (validation with the server determined by number of reboots or by the number of elapsed days), disable access to peripherals, and require that the host is running antivirus and or antispyware utilities).

VDesk clients can be distributed as a PC installation or on a USB drive, or can be run from a network share or on a central server and accessed using Virtual Desktop Infrastructure services. The main distribution method is facilitated by another Web service run by the administration server. This allows the vDesk client to be downloaded and a virtualized environment (called a "workspace") to be launched on a PC. Because it doesn't require an OS to be downloaded, the workspace loads quickly.

Users can have multiple workspaces defined but can only run one at a time on a given machine. Having multiple workspaces allows for different configurations when the virtualized environment is run in the office, on a laptop, from a USB drive and so on.

I tested Version 1.0 which was launched this week and I'm impressed. The product does what it claims, is simple to install, configure and run, and the performance of applications is excellent.

This first release could be criticized for the client presenting a somewhat complex interface where naïve users are concerned. RingCube plans to address this but told me that it wanted to get as much functionality implemented as it could in the first release. VDesk starts at $200 per user and allows a user as many as four workspaces.

After I've beaten this product up for a few more weeks we'll take another look. In the meantime, I'll give RingCube's vDesk 5 out of 5. Outstanding!

Gibbs sounds excited in Ventura, Calif., at gearhead@gibbs.com.

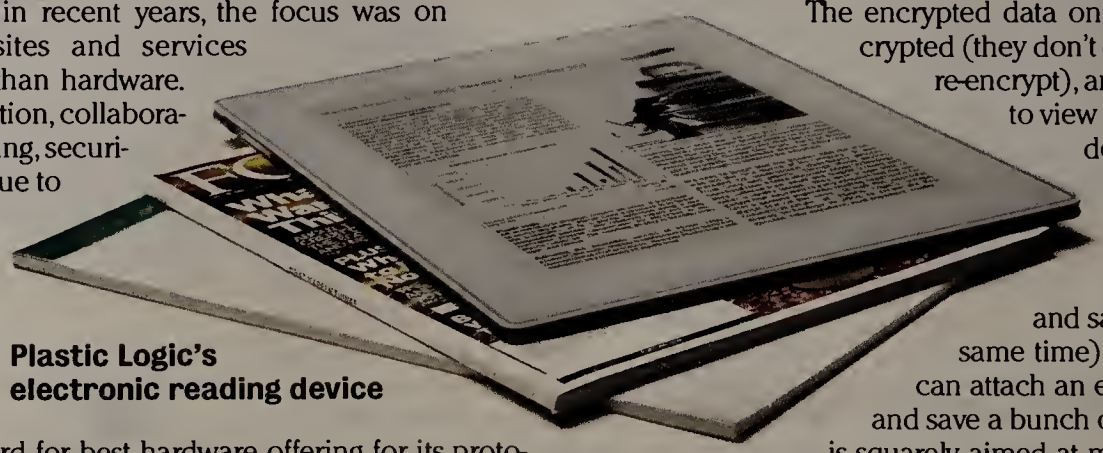
COOLTOOLS

Keith Shaw

What was cool at DEMOfall08?

It's time once again for people on-site here at DEMO and back at work to ask me, "What was cool at DEMOfall?" The show (produced by *Network World's* events team) took place last week in San Diego and featured 72 companies offering the latest in technology products.

As in recent years, the focus was on Web sites and services more than hardware. Social networking, collaboration, collaboration through social networking, security and Web searching continue to be themes that weave through lots of the products offered. Still, for guys like me looking for "cool stuff," there was plenty to impress. Here are two of my favorites:



Plastic Logic's electronic reading device

Plastic Logic wins the award for best hardware offering for its prototype device that aims to bring the term "plastic electronics" to the collective conscious. Thinner than a pad of paper, the electronic reading device is designed to bring a high-quality reading experience to the world of business documents, such as magazines, newspapers, presentations and business plans.

At first glance it will be compared with Amazon's Kindle e-book reader, but it's a lot lighter and thinner, and uses electronic ink and a touchscreen that's impressive to look at. Along with USB connectivity, the device will have a Wi-Fi connection, but after seeing it you don't want anything else to add bulk to it. Plastic Logic is scheduling to ship the device in the first half of 2009 (no pricing announced yet).

RealNetworks got a lot of buzz surrounding its RealDVD software offering, mainly because a lot of us are wondering whether the company will get sued by the motion picture industry. RealNetworks says it's all legal, and here's what the software does: It lets users copy DVDs that they own onto a PC's hard drive, and then view the content on the PC without the DVD in the drive.

The encrypted data on the hard drive remains encrypted (they don't decrypt, then compress, then re-encrypt), and multiple PCs are allowed to view the content (as many as five devices, RealNetworks says). I got a sneak peek at the software and it works well (there's a cool feature that lets you watch the movie and save it to the hard drive at the same time). Another nice touch — you can attach an external hard drive to the PC and save a bunch of movies there. The software is squarely aimed at mobile travelers who want to watch movies on notebooks and don't want to bring along their DVDs. As the parent of a toddler, I also like being able to store a movie on the hard drive, allowing me to spare the already thumb-print-ridden DVD from further abuse. It also ends the frustration of having to re-buy movies or episodes of content that I already own. The software will be available later this month for an introductory price of $29.99.

There were 70 other companies that launched products at the show — be sure to check the videos, podcasts, blogs and other coverage at www.networkworld.com.

Shaw can be reached at kshaw@nww.com.

Thin is in.

Thin AP technology
Thin 12-mm profile
Fits in the smallest spaces

Introducing the Wi-Jack Duo,™ the world's smallest, thinnest 802.11a/b/g wireless access point. Its centrally managed thin AP technology means better security and easier management. The sleek design fits unobtrusively into a standard wall box and supports an optional network port. Thin is in for higher performance in wireless network performance.

Get the story on why the Wi-Jack Duo is the perfect wireless solution by calling 800-934-5432 or visiting **www.ortronics.com/wi-jack**

Come see us at Interop Booth 229

ORTRONICS

legrand®

EXPERTISE. TECHNOLOGY. SOLUTIONS.

CASE STUDY

WAL-MART'S RFID REVOLUTION A TOUGH SELL

Even for the world's biggest retailer, championing an unproved technology with no clear ROI has been difficult

BY JOHN S. WEBSTER > PHOTOS BY GARY LAUFMAN

Pacific Coast Producers might never have considered RFID had Wal-Mart not mandated in 2003 that its suppliers start tagging cases and pallets of merchandise. When CIO Peter Wtulich took a closer look at the technology, however, he became convinced that RFID could deliver significant ROI to the $450 million canned-fruit company.

"A lot of other companies saw this as a tax on their business, but we saw a way to enhance our business and improve overall as a company that is forward looking and customer focused," Wtulich says.

"RFID was out there and we'd heard about it, but we didn't deploy it until Wal-Mart mandated it. But at that point, we decided to really commit to the technology, and we went beyond the mandate to make it a more valuable addition to the company," adds Jim Farmer, the company's distribution-center manager.

Today, Pacific Coast Producers downloads data from Wal-Mart's RetailLink supply-chain system to its own OatSystems RFID software. As a result, the company has gone from having no way to analyze where inventory is, to having a complete picture, Wtulich says. Bottom line: out-of-stocks have been reduced by about 50%.

Pacific Coast Producers represents an important RFID success story, but the company's enthusiastic embrace of the technology is the exception rather than the rule.

Michael Laird, an analyst at ABI Research, says the more typical reaction of suppliers faced with Wal-Mart's mandate was: "I have to do this now, but what's in it for me? What do you do with the data? What will it look like? Wal-Mart wants me to tag, so I have to manually slap a label on a case and a pallet and have a printer at the end of the line."

The transition to RFID technology has been "a forced march" for most of Wal-Mart's suppliers. "They wouldn't have done it on their own and some have only a bare-bones system," adds Gartner analyst Charles Eischenger.

One key barrier is the money required to implement an RFID infrastructure. Eischenger estimates that smaller companies have to invest $100,000 to $300,000, and the price tag for a large manufacturer could hit $20 million.

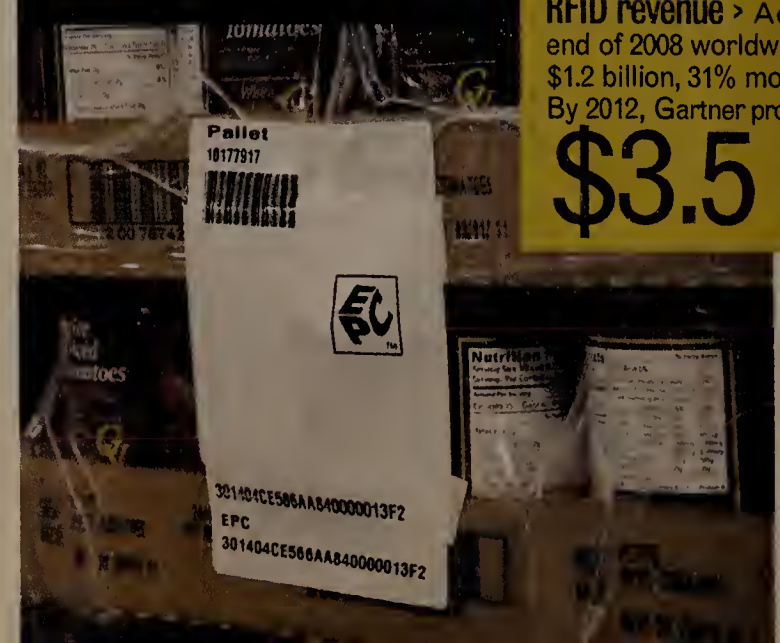
In addition, when Wal-Mart then-CIO Linda Dillman shocked the retail world in 2003 by announcing that Wal-Mart was going to require all its suppliers (beginning with

"A lot of other companies saw this as a tax on their business, but we saw a way to enhance our business and improve overall as a company that is forward looking and customer focused."

PETER WTULICH CIO, PACIFIC COAST PRODUCERS

RFID revenue > According to Gartner, by the end of 2008 worldwide RFID revenue will reach $1.2 billion, 31% more than RFID revenue in 200 By 2012, Gartner projects, RFID revenue will reach

$3.5 billion.



Pacific Coast Producers slaps Generation 2 Electronic Product Code "EPC" tags on cases and pallets of canned tomatoes.

the top 100) to tag pallets and cases of merchandise with RFID chips, the technology was immature and untested. Standards didn't exist. There was no off-the-shelf software. The chips themselves were expensive. The readers had a high error rate, especially when it came to such materials as liquids and metals. Most importantly, the ROI was unclear.

For tech watchers, Wal-Mart's push into RFID represented a fascinating case of a private company using its huge market clout to drive the use of a new, unproved technology.

Falling expectations

Five years into the RFID revolution, it's clear that implementation is occurring more slowly than Wal-Mart originally envisioned. "Our goal is to track all pallets and cases," Dillman said in 2003.

Today, 600 of Wal-Mart's 60,000 suppliers plus 750 Sam's Club suppliers have deployed RFID to some degree. On Wal-Mart's end, RFID is deployed at about 1,000 of the roughly 4,000 Wal-Mart and Sam's Club stores in the United States.

Wal-Mart's original goal was to have 12 of its approximately 120 distribution centers outfitted for RFID by 2006. Today, only five are set up for RFID, because the company has shifted its RFID focus to in-store implementations.

Analysts give Wal-Mart full credit for being on the bleeding edge of a new technology. The company's timetable — having all suppliers onboard by the end of 2006 — may have been a bit too ambitious, however.

"They've backed off a bit with the mandates and maybe missed some milestones," Gartner's Eischenger says. "Wal-Mart has let some suppliers off the hook," adds Anne Grackin, CEO of ChainLink Research.

Bullish on benchmarks

Simon Langford, who now leads Wal-Mart's RFID efforts, sees things in a more positive light. The company has met its benchmarks for reductions in out-of-stock items and improvements in inventory data, he says. "At every point where we've expanded the technology to widen the number of suppliers, we've exceeded our goals. More of them are saying, 'I want to get engaged in this.' We saw the value, and when they saw it, suppliers came to us as well," he adds.

Langford points out that after Wal-Mart issued the mandate to its top 100 suppliers, an additional 34 suppliers volunteered. In addition, although 600 suppliers represents a fraction of the total number, they account for three-quarters of the company's sales volume, he says.

Langford concedes that getting suppliers to embrace RFID required some "teaching." "Our advice for suppliers is, what was sensible for the first 100 suppliers — who can better see what the data means for business — is sensible for all of them," he says.

Langford recognizes that smaller companies might not have the money to invest in a full-blown RFID-based supply-chain system. "Smaller companies are more nimble, but maybe they have less to invest in IT. They look at it and say, 'What is my road map? Where do I want to go with this?' They can start small, but it's a start," he says.

Many happy returns

Wal-Mart is unshakable in its belief that RFID delivers business benefits. "We've reduced out-of-stocks by 8% worldwide, and we can resupply three times faster. Suppliers have seen a significant increase in sales, which is where the rubber meets the road. We've also done recent tests that showed perpetual inventory improving by 20%," Langford says.

As Wal-Mart and its suppliers become more familiar with RFID, new ways to gain benefits are emerging. The initial focus was on simple inventory tracking: Did the pallet arrive in Dallas? Then companies realized that RFID can play a major role in asset management: Did that HD-TV just walk out the door?

Additionally, there are the benefits of robust, two-way, supply-chain-based communication between the supplier and Wal-Mart's RetailLink system: Is the store in North Dallas running low on canned tomatoes and is there more inventory at the Dallas distribution center, or does Pacific Coast Producers need to ship more?

Now, companies are using RFID to track the real-time sales of items that sit in the promotional areas of stores.

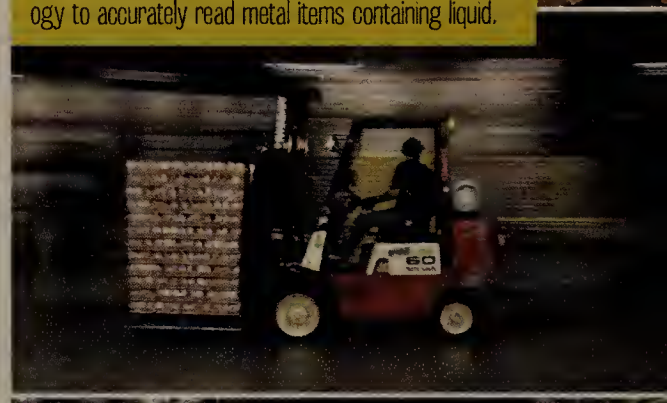
"Overall, the technology has gone beyond slapping tags on pallets to more collaboration between the supplier and retailer. Gillette, for example, likes to sell through promotions and have placement on the end-cap instead of the aisle; and with RFID, you get the real-time aspect of ensuring that," Gartner's Eischenger says. "Gillette analyzes the data and can take feet off the street — they don't have to have a sales manager check each store, and they can tweak future engagements at various sites. This allows them to do other value-added activities instead of baby-sitting the store," he adds.

Procter & Gamble tells a similar story. "The key to learning was seeing the value of the technology, and we struggled to immediately see that," says P&G spokesman Paul Fox.

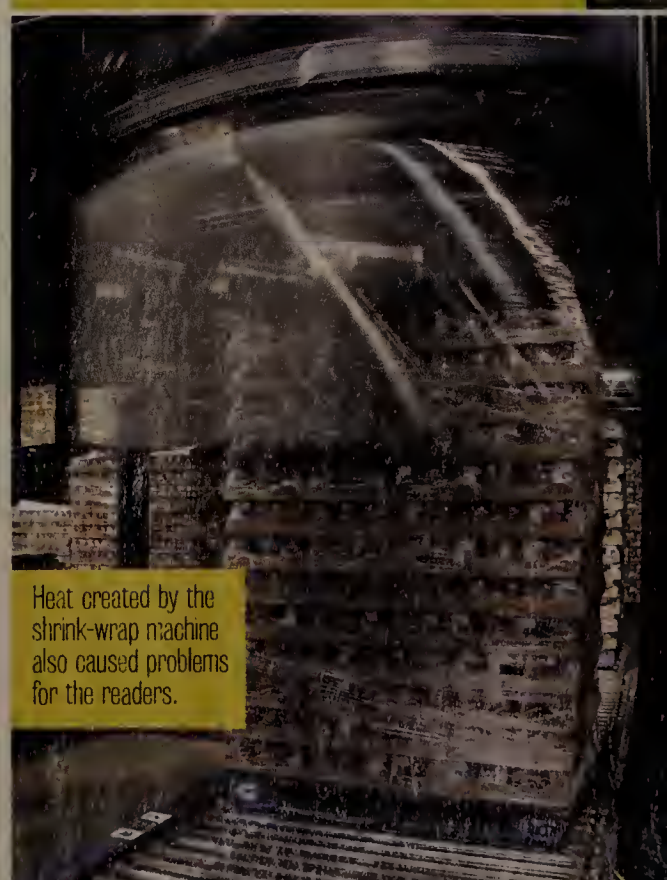
P&G, however, has found a specific business application perfectly suited to an RFID-based inventory system: keeping track of merchandise located in highly expensive, time-sensitive displays.

Ideally, manufacturers want to work with retailers to put products in special locations — such as batteries during Christmas or cleaning supplies in the spring, says Milan Turk, RFID manager at P&G. "This can get messed up when the information is not relayed into the supply chain, for example, how many display materials

Pacific Coast Producers had to overcome several obstacles, including the difficulty of early RFID technology to accurately read metal items containing liquid.



When RFID was first installed, the assembly line, which had been running at 100% capacity, dropped to 33%, Wtulich says. After serious tweaking, it's back up to 100%.



Heat created by the shrink-wrap machine also caused problems for the readers.

arrive at which store," he says. With RFID information tied into Wal-Mart's RetailLink system, "You can see that it arrived at the store, moved out onto the sales floor and was executed as a display," he adds.

The real value to P&G is "for interested shoppers to see the product and find it when it's advertised," Turk says.

Standard bearer

Wal-Mart was so early to the RFID party that it literally had to help create the standards. "Wal-Mart was on RFID's bleeding edge. Standards were waffling back and forth when they first deployed," Gartner's Eischenger says. Wal-Mart first explored the technology in 2000, but no global RFID standards even existed then, Langford says.

Along with other early adopters, most of which were interested in RFID as a way of tracking merchandise internally (including P&G, Kimberly-Clark, and Dial/Unilever), the company helped develop what is now ISO 18006-C and the recent Generation 2 standard for RFID tag readers. "The global, open standard lowers the cost of implementation for everybody. It's complete, it's out there, and it's what was needed," Langford says.

Wal-Mart's high-profile commitment to RFID also helped push the technology forward. "They drove technology development among IT vendors and system vendors," says ABI Research's Laird says.

In 2003, first-generation chips sold for $1.25 each. Today, second-generation chips cost 7 cents to 10 cents. In addition, packaged applications are available today that make deployment much easier for Wal-Mart suppliers.

And now that standards are in place, the off-the-shelf RFID software market has blossomed. IBM, OatSystems, Axis, SAP and Oracle all provide RFID middleware.

The tab for tags > The cost of tags has dropped to less than 10 cents, but many industry experts have been saying that

RFID won't really make financial sense for suppliers until the cost of tags drops to 2 cents.

"It's just the maturity of the whole RFID industry, in terms of the required processes. Middleware has also matured, and standards have matured. There were reports that early read-rate accuracy was 60%, but now that is more like 90% to 99%. It's also process improvement, tagging the right way," says IDC analyst Leslie Hand.

"Now that there are more packaged solutions, and better-integrated standards have been resolved, suppliers know how to tag, and where to place the readers. Over the next couple of years, they'll bake it into their IT infrastructure from sales to stock replenishment and be able to share more data with Wal-Mart," Eischenger says.

Quiet period

After making its big splash in 2003, Wal-Mart has been reluctant to talk publicly about its RFID project. "They've been quiet and moved off the rhetoric," Eischenger says. "They've been a bit more reserved." That may be because CIO Dillman, the early champion of RFID, has moved on to another job within Wal-Mart. It may be that the company realized that the RFID revolution was going to be more difficult and take longer than it originally announced.

Another possibility is that because its competitors also are moving into RFID, Wal-Mart wants to keep any competitive advantages under wraps, says Eischenger says.

Laird agrees. He sees Wal-Mart's low profile as indicating that it sees a real competitive edge by using RFID. "They're very guarded about what they've discovered," he says.

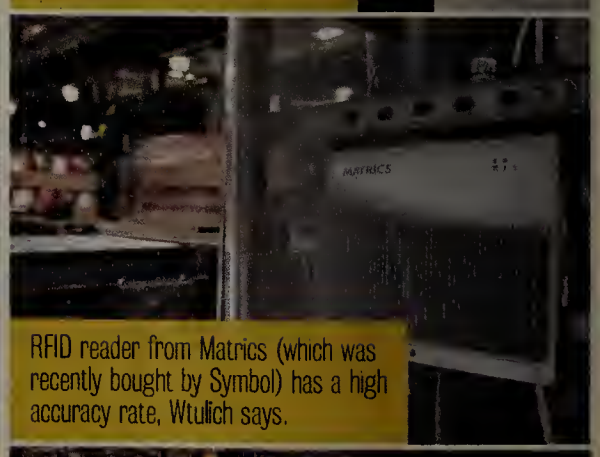
Today, Wal-Mart isn't giving out specific numbers in terms of money saved through RFID or specific goals for RFID implementations. Nevertheless, the company is not backing down on its commitment. In fact, when *The Wall Street Journal* reported recently that Wal-Mart's RFID effort was fizzling, current CIO Rollin Ford shot back with a feisty letter to the editor that defended the push into RFID as a way to increase efficiency and give customers a better shopping experience. "Stores with RFID have proven to be 60% more effective in replenishing items from the back room to the store shelves than stores without RFID," he wrote. Wal-Mart plans to continue rolling out the technology at a rate of about 400 stores a year, he said in a recent appearance at an RFID trade show.

Still, Ford concedes that "RFID is still in rollout, the critical stage before widespread implementation when any new technology continues to evolve."

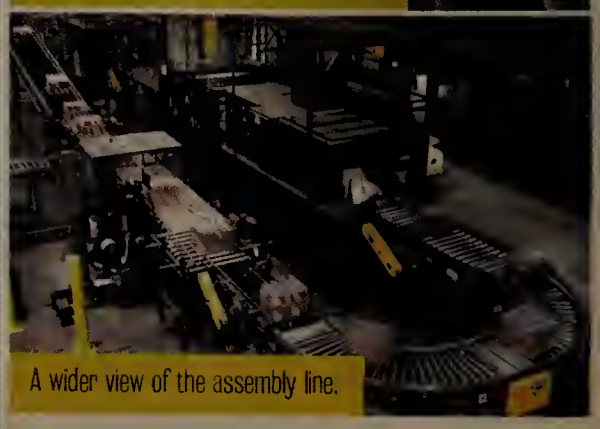
Webster is a freelance writer in Providence, R.I. He can be reached at john.s.webster@verizon.net.

"RFID was out there and we'd heard about it, but we didn't deploy it until Wal-Mart mandated it. But at that point, we decided to really commit to the technology." **JIM FARMER, DISTRIBUTION CENTER MANAGER, PACIFIC COAST PRODUCERS**

This RFID printer spits out labels.



RFID reader from Matrics (which was recently bought by Symbol) has a high accuracy rate, Wtulich says.



A wider view of the assembly line.

Microsoft

In a consolidated IT world, you need servers that run on legs of steel. So we gave Windows Server® 2008 innovations, such as Failover Clustering and a Server Core installation option, that help isolate, resolve, and evade problems to deliver superhuman reliability.

Meet the new Windows Server 2008 at **serverunleashed.com**

IT 24-7

It understands two things:

"go" and "further."

Windows Server 2008

SENSAPHONE®
REMOTE MONITORING SOLUTIONS

Monitor the REST of Your Computer Room!

- Physical Security
- Video
- Temperature
- Power Problems
- Water on the Floor
- Humidity
- Smoke and Fire
- And much more

Instant Notification by Phone or E-mail when events threaten your Infrastructure.

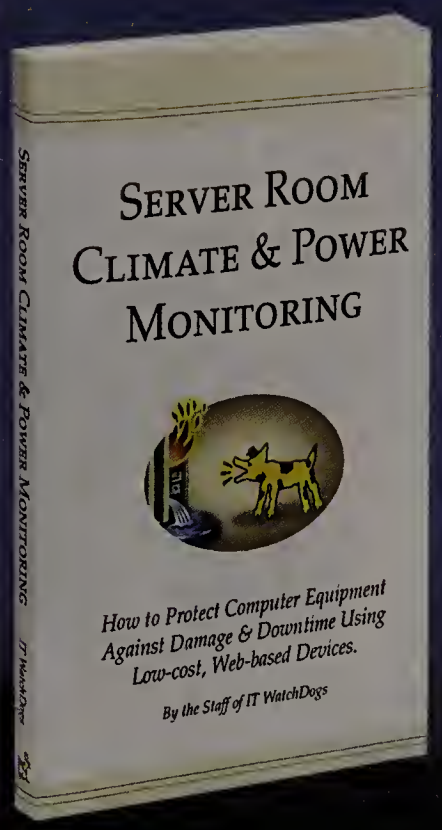
New solutions starting at under $1,000

Dealers Wanted

Contact us today to discuss your application

www.ims-4000.com 877-373-2700

Server room climate worries?



Get our free book.

E-mail FreeBook@ITWatchDogs.com with your mailing address or call us at 512-257-1462

Instantly Search Terabytes of Text

- over two dozen indexed, unindexed, fielded data and full-text search options
- supports hundreds of international languages
- file parsers / converters for hit-highlighted display of all popular file types
- Spider supports static and dynamic web data; highlights hits while displaying links, formatting and images intact
- API supports .NET, C++, Java, SQL, etc. New .NET Spider API

The Smart Choice for Text Retrieval® since 1991

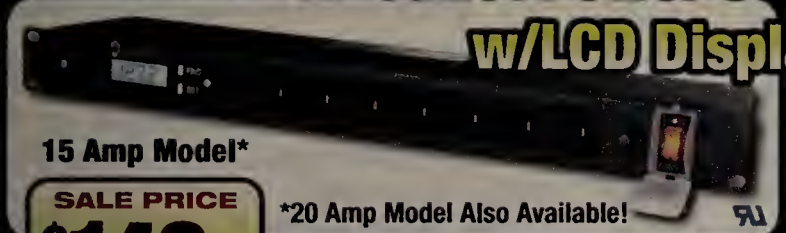
- "Bottom line: dtSearch manages a terabyte of text in a single index and returns results in less than a second" – *InfoWorld*
- "For combing through large amounts of data," dtSearch "leads the market" – *Network Computing*
- dtSearch "covers all data sources ... powerful Web-based engines" – *eWEEK*
- dtSearch "searches at blazing speeds" – *Computer Reseller News Test Center*

See www.dtsearch.com for hundreds more reviews, and hundreds of developer case studies

Contact dtSearch for fully-functional evaluations

1-800-IT-FINDS • www.dtsearch.com

17-Outlet Power Strip w/LCD Display



15 Amp Model*

SALE PRICE $149 plus S&H

*20 Amp Model Also Available!

SHOWS: Volts, Amps, Watt, VA, Frequency, Power Factor & KWH

A-Neutronics, Inc. purchase directly at www.a-neutronics.com or call toll-free: 1-877-263-8876

FREE information

advice | news | tips

Subscribe to Network World's free e-newsletters.

Network World offers more than 50 technology specific e-mail newsletters, written by experienced editors and industry experts. You can sign up for any of our newsletters by going to **www.networkworld.com/nlsub**

NETWORKWORLD®

The Original Windows based Systems Management Appliance

Ready Set Manage

Up and Running in Under 1 Hour!

Altiris Appliance allows you to Deploy, Manage, Track and Troubleshoot client systems from a single web-based management console.

Altiris Appliance

- ✓Comprehensive Inventory
- ✓Deploy "Ghost" Images
- ✓Distribute Software
- ✓Monitor Application Usage
- ✓Patch Delivery
- ✓Power Management
- ✓Remote Control
- ✓Reporting and More...

symantec.

Altiris Solutions PLATINUM PARTNER

AltirisAppliance.com
sales@altirisappliance.com
866-638-9462

Gain flexibility with the Aggregator *n*TAP™

www.networkTAPs.com

Efficiently aggregate full-duplex data into your analysis or security device.

- Supports 10/100/1000
- Stream into two different devices
- Rack mount up to three across
- Supports all commercial analysis systems
- Also works with open-source tools

Buffer options:

256 MB..... **$1,295**
512 MB..... **$1,795**
NEW! 1 GB **$2,195**

Learn more. Visit **www.networkTAPs.com**.

nTAP™

Choose from a variety of configurations, options, and pricing. Plus a complete line of copper and optical *n*TAPs for full-duplex analyzer systems.
*Free overnight delivery**

www.networkTAPs.com • 1-866-GET-*n*TAP

*Free overnight delivery on all U.S. orders over $295 confirmed before 12 p.m. Central Time.

© 2008 Network Instruments, LLC. *n*TAP and all associated logos are trademarks or registered trademarks of Network Instruments, LLC.

FOUNDRY NETWORKS

Join the LEADER!

SOFTWARE ENGINEERS:

Design and Develop Advanced IP Routing, MPLS/VPLS, Mulicast, L2 Switching, and L 4-7 Application Management Products

TAC ENGINEERS:

CCIE Level Technical Support

QA ENGINEERS:

Develop testing requirements for new features and functionality of ultra high performance routing, bridging, and L4 -7 products

Brilliant Minds Desired!

www.foundrynet.com/careers

Spectrum
continued from page 22

Marcus, who has bought, sold and leased spectrum for years. "SpecEx is a major game-changer," Marcus says.

"Once your spectrum license is issued by the FCC, you can virtually hold it forever, unless you violate the FCC rules," he says. "Most of the time, people buy spectrum for a purpose. But purposes change. People are going to come here [to SpecEx] and realize that they can re-purpose their spectrum."

FCC shifts gears

Changes at the FCC have paved the way for a company like Spectrum Bridge.

Starting around 2000, the FCC took several key steps toward more efficient spectrum management. First, Rotondo says, the agency dramatically simplified the regulatory filing process for the secondary market. In many cases, applicants can get overnight approval, according to Rotondo. Second, the FCC granted what amounts to limited property rights to spectrum holders by allowing more of them to lease their licenses to others.

Related to this, the FCC also clarified a bunch of rules that let spectrum holders disaggregate their spectrum. "If you are licensed to cover a certain geographical area, you now can divide that up," says Dale Hatfield, formerly chief technologist for the FCC and now an adjunct professor at University of Colorado, Boulder and co-chair of the U.S. Department of Commerce's Spectrum Management Advisory Committee.

Spectrum can also be subdivided by channels, and even timeshared. For example, an electric utility might lease spectrum from another holder during the hours of 12 a.m. to 3 a.m, when it's not being used by the holder to wirelessly read electric meters.

It was a major shift. "If you look back, the government has tightly controlled spectrum," Hatfield says. "To make any changes in the license, you had to go through a lengthy process, taking years in some cases."

"But the FCC threw a party and no one came," Rotondo says. "No one came and said 'we'll build a centralized marketplace, and reduce transaction costs, and do it in an open environment.'"

Now SpecEx.com does that. License holders open an account on the Web site, and Spectrum Bridge validates the FCC Registration Numbers (FRN) for any licenses being listed. Members detail license listings, including the FRN number, call sign, information about how the license was acquired, any special restrictions and so on. Other forms allow a member to set pricing rules such as minimum prices, or to geographically partition the license using different criteria such as counties, ZIP codes or FCC boundaries.

Buyers can sift through all this data using either a simple or advanced search interface. SpecEx offers standardized legal agreements and contracts, secure third-party payment clearing, and tools to simplify and automate documentation required by the FCC.

Prospective buyers are intrigued. "This is an interesting model to finally put a lot of people [virtually] into the same room," says Jeff Thompson, CEO of TowerStream, a wireless broadband service provider based in Middletown, R.I. "A few times, people have tried to go down this road. This one has actually pulled it together."

Spectrum holders today are being offered a free account for six months on the exchange. They can create listings for their licensed spectrum, and search available listings. Still missing are some back-end components to fully automate online financial transfers, contracts and FCC filings. Those are due to be in place and operational by Oct. 30.

Some transactions are already pending, being shepherded along manually by Spectrum Bridge's customer support team, according to Rotondo.

There have been some other attempts at creating a market for spectrum, notably that by Cantor Fitzgerald. The financial services firm offers the Cantor Spectrum Exchange, headed by Darrin Mylet.

But SpecEx seems to be in a class by itself. "To my knowledge, this is the first clearinghouse approach to allocating otherwise unused spectrum," says Craig Mathias, principal at wireless advisory firm Farpoint Group. "You can think of it as a real-time market for spectrum. I love the idea." ■

DLP
continued from page 22

purposes, the security staff is concerned about what MetLife employees might end up posting online.

"Data-leak protection becomes more critical to us now," says Montano. "But defining 'sensitive' is problematic in and of itself." He adds: "How do you provide an environment that limits, warns or educates individuals?"

That's exactly the challenge that concerns Starla Rivers, technical security architect at Sharp Healthcare in San Diego, which operates hospitals and clinics and deployed the Symantec DLP to watch for unauthorized transmissions of patient-care or business data.

"DLP has helped us determine where the data is and who's using it," says Rivers. DLP set-up was simple, she says, and while it has clearly helped in stopping data leaks, which are mainly mistakes like failing to encrypt information, the biggest challenge has been in getting employees to wake up to the changes wrought by DLP.

Policy used to be very broad, with the Health Insurance Portability and Accountability Act privacy rules expounded in employee training, but DLP is bringing this to life in a very specific way that employees find is a surprise as their computer screens fill with a DLP warning that some action they just took was in violation of Sharp Healthcare's policy.

One problem, for instance, is that doctors want to access documents they've stored elsewhere that are out of Sharp Healthcare's immediate control.

Sometimes employees at the hospitals simply fail to apply the DLP training they get to the reality of everyday computer use. "There's a large disconnect between the training we provided and each employee understanding this really means you," says Rivers. But she adds she and other staff are re-doubling their efforts to find new ways to get the policy-enforcement message of DLP out to employees in a friendly manner.

"We're trying to phrase the message: we're trying to do something for you, not to you. Most employees mean to do well," she says. ■

■ **Network World**, 492 Old Connecticut Path, Framingham, MA 01701-9002, (508) 766-5301.

Periodical postage paid at Framingham, Mass., and additional mailing offices. Posted under Canadian International Publication agreement #PM40063731. Network World (ISSN 0887-7661) is published weekly, except for combined issues for the first two weeks of July and the last two weeks in December by Network World, Inc., 492 Old Connecticut Path, Framingham, MA 01701-9002.

Network World is distributed free of charge in the U.S. to qualified management or professionals.

To apply for a free subscription, go to www.subscribenw.com or write Network World at the address below. No subscriptions accepted without complete identification of subscriber's name, job function, company or organization. Based on the information supplied, the publisher reserves the right to reject non-qualified requests. Subscriptions: 1-508-820-8117.

Nonqualified subscribers: $5.00 a copy; U.S. - $129 a year; Canada - $160.50 (including 7% GST, GST#126659952); Central & South America - $150 a year (surface mail); all other countries - $300 a year (airmail service). Four weeks notice is required for change of address. Allow six weeks for new subscription service to begin. Please include mailing label from front cover of the publication.

Network World can be purchased on 35mm microfilm through University Microfilm Int., Periodical Entry Dept., 300 Zebb Road, Ann Arbor, Mich. 48106.

PHOTOCOPYRIGHTS: Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by Network World, Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $3.00 per copy of the article, plus 50 cents per page is paid to Copyright Clearance Center, 27 Congress Street, Salem, Mass. 01970.

POSTMASTER: Send Change of Address to **Network World**, P.O. Box 3090, Northbrook, IL 60065. Canadian Postmaster: Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A7C9.

Copyright 2008 by Network World, Inc. All rights reserved. Reproduction of material appearing in Network World is forbidden without written permission.

Reprints (minimum 500 copies) and permission to reprint may be purchased from Reprint Management Services at (717) 399-1900 x128 or networkworld@reprintbuyer.com.

USPS735-730

WIRELESS IN THE ENTERPRISE

Subscribe to our free newsletter:
www.nwdocfinder.com/1028

NETWORKWORLD

Editorial Index

A
Advanced Micro Devices 16
Agito Networks 24
Altor Networks 20
Amazon.com 8, 32
Apani Networks 40
Apple 18
Arch Rock 10
Aruba Networks 24
AT&T 12
Atheros Communications 11
Axis 36

B
BlueStripe Software 17
BMC Software 40
BridgeWave Communications 11
Broadcom 11

C
CA 17
Catbird Networks 20
Cerego 18
Cisco 1, 10, 14, 18
Citrix Systems 16, 20, 32
Computers In Motion 14

D
Dell 16, 24
Dial Directions 8
DragonWave 11

E
eG Innovations 40
Embotics 8
EMC 11, 20
Enterasys Networks 1
Extreme Networks 1

F
Facebook 40
Fidelis Security Systems 22
Finjan 4
Force10 Networks 1
Foundry Networks 1

G
Gigamon Systems 24
Google 4, 8

H
HP 24

I
IBM 10, 11, 17, 24, 36
Intel 11, 16
Ipanema Technologies 24

J
Juniper Networks 1

K
Kace Networks 14

L
Lenovo Group 24
LinkedIn 40
Logitech International 24

M
Mapflow 18
Marvell Technology 11
Microsoft 8, 10, 14, 16, 28
Motorola 11, 22

N
Nortel 11
Novell 10

O
OatSystems 34
Oracle 17, 20, 36

P
Palm 24
Plastic Logic 8, 18, 32
Proxim Wireless 11

Q
Qwest Communications 12

R
RealNetworks 32, 42
RingCube Technologies 32

S
SAP 10, 11, 36
Shavlik Technologies 20
SiBeam 11
Spectrum Bridge 22
SpinSpotter 42
Sun 17, 20, 40
Symantec 14, 17, 22, 24

T
Towerstream 40
Tripwire 20, 40

U
Usable Security Systems 8, 18

V
Veam Software 40
Verdasys 22
Verizon 12
VirtualIron Software 20
VMware 1, 4, 14, 16, 28, 32

W
Websense 22

Y
Yahoo 8

Advertiser Index

Advertiser	Page #	URL
A-Neutronics	39	www.a-neutronics.com
ATEN Technology	19	www.aten-usa.com/smb
Altiris Appliance	39	www.AltirisAppliance.com
DNSstuff	43	DNSstuff.com
dtSearch Corp	38	www.dtsearch.com
Eaton Corp	16-17	YouPowerThrough.com/nw
Foundry Networks	39	www.foundrynet.com/careers
Hewlett Packard	15	hp.com/go/BeReady46
IBM Corp	2-3	ibm.com/green/datacenter
IBM Corp	6-7	ibm.com/green/software
IBM Corp	44	ibm.com/systems/uptime
IT Watchdogs	38	ITWatchdogs.com
Masergy	25	masergy.com
Microsoft Corp	21	easyeasier.com
Microsoft Corp	29	DesignedForBig.com
Microsoft Corp	37	serverunleashed.com
Network Instruments LLC	31	www.NetworkInstruments.com/resolve
Network Instruments LLC	39	www.networkTAPs.com
Ortronics	33	www.ortronics/wi-jack
Sensaphone	38	www.ims-4000.com
Sprint	9	sprint.com/business
Westcon	13	westcon.com/gogreen

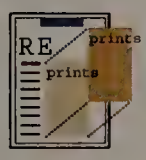
These indexes are provided as a reader service. Although every effort has been made to make them as complete as possible, the publisher does not assume liability for errors or omissions.

*Indicates Regional Demographic

International Data Group
Chairman of the Board, Patrick J. McGovern

IDG Communications, Inc.
CEO, Bob Carrigan

Network World is a publication of IDG, the world's largest publisher of computer-related information and the leading global provider of information services on information technology. IDG publishes over 300 computer publications in 85 countries. One hundred million people read one or more IDG publications each month. *Network World* contributes to the IDG News Service, offering the latest on domestic and international computer news.



Publicize your press coverage in *Network World* by ordering reprints of your editorial mentions. Reprints make great marketing materials and are available in quantities of 500 and up. To order, contact Reprint Management Services at (717) 399-1900 x128 or E-mail: networkworld@reprintbuyer.com.

NetworkWorld® Events and Executive Forums

Network World Events and Executive Forums produces events including IT Roadmap, DEMO and The Security Standard. For complete information on our current event offerings, call us at 800-643-4668 or go to www.networkworld.com/events.

Network World, Inc.

492 Old Connecticut Path, Framingham, MA 01701-9002
Phone: (508) 766-5301

TO SEND E-MAIL TO NWW STAFF
firstname_lastname@nww.com

CEO: John Gallant
Publisher: Dan Hirsh

ONLINE SERVICES
Vice President/General Manager: Susan Cardoza
V. P., Audience/Partnership Development: Dan Gallagher
Director of Client Services: Jennifer Moberg

SEMINARS, EVENTS AND IDG EXECUTIVE FORUMS
Exec. V. P., Events/Executive Forums: Neal Silverman
Vice President, Event Sales: Andrea D'Amato
V. P., Event Marketing/Business Dev.: Mike Garity
Director of Event Operations: Dale Fisher

MARKETING
Director of Marketing: Donna Pomponi

AD OPERATIONS
Senior Production Manager: Jami Thompson
Advertising Coordinator: Maro Eremyan

FINANCE
Vice President Finance: Mary Fanning

HUMAN RESOURCES
Director of Human Resources: Eric Cormier

CIRCULATION/SUBSCRIPTION
Membership Services Specialist: Judy Cloutier
Direct: (508) 820-8117

INFORMATION SERVICES
CIO: W. Michael Draper
Director of Systems Development: Tom Kroon

IDG LIST RENTAL SERVICES
Director of List Management, Steve Tozeski
Toll free: (800) IDG-LIST (US only)/Direct: (508) 370-0822

Sales

Vice President/Associate Publisher: Sandra Kupiec

New York/New Jersey
Elisa Della Rocco, Regional Account Director
(201) 634-2300/FAX: (201) 634-9286

Northeast
Elisa Della Rocco, Regional Account Director
(201) 634-2300/FAX: (201) 634-9286

Mid-Atlantic
Jacqui DiBianca, Regional Account Director
(610) 971-0808/FAX: (201) 621-5095

Midwest/Central
Sandra Kupiec, Vice President/Associate Publisher
(415) 243-4122/FAX: (415) 267-4519

Southeast
Al Schmidt, Regional Account Director
(972) 631-3730/FAX: (972) 631-3993
Enku Gubaie, Account Manager
(508) 460-3333/FAX: (508) 460-1192

Northern California/Northwest
Karen Wilde, Regional Account Director
Vanessa Tormey, Regional Account Director
Coretta Wright, Regional Account Manager
Katie Layng, District Manager
Hillary Bullard, Account Executive
(415) 243-4122/FAX: (415) 267-4519

Southwest/Rockies
Katie Layng, District Manager
(415) 243-4122/FAX: (415) 267-4519

Online/Integrated Solutions
Debbie Lovell, Regional Account Director Northeast
Daniel Hunt, Account Executive
(508) 766-5301/FAX: (508) 766-5320

EVENT SALES
Kevin Hause, Sr. Director, Global Sales, DEMO
Michael McGoldrick, Regional Account Director
Grace Moy, Regional Account Director
Jennifer Sand, Regional Account Director
Leilani Hammock, Sales Representative
(508) 766-5301/FAX: (508) 766-5327

BACKSPIN

Mark Gibbs

Being in control and illusory losses

Computers are sneaky things. They make us think we can be truly organized, that we can keep stuff — any stuff — in context and at our fingertips. They seduce us into thinking we can monitor and control the world. Add to that the network management systems that drown us in status data, and we're ready to monitor and manage every minute detail of our IT systems.

This idea we can control everything has led us into a fantasy world where we believe we can measure and value the tiny bits of time that hang off the computing tasks and behaviors within our enterprises.

For example, IT services firm Dimension Data recently conducted a survey of 267 IT decision-makers and concluded the following: The average network user loses 35 minutes per month on network logon delays, 25 minutes per month on e-mail delays and 23 minutes per month on file-transfer delays.

So, the average network user loses almost one and a half hours per month to network performance issues. Fair enough. Let's say the fully burdened cost of one of these average employees is $75,000 per year or roughly $43 per hour. That means that if you have, say, 500 employees, these network problems are costing you $32,250 per month or $387,000 per year.

That's not all of the incremental losses that plague us. There's the problem of how much time network users spend on handling spam, how long they spend on non-business-related sites and on eBay, and how much time they waste on instant messaging and updating Facebook, MySpace and Twitter. That's got to amount to at least another lost hour or two per month, so your 500-person operation easily could be wasting $500,000 to $600,000 per year. Wow.

Something must be done, right? Actually, no, there's really nothing that needs to be done.

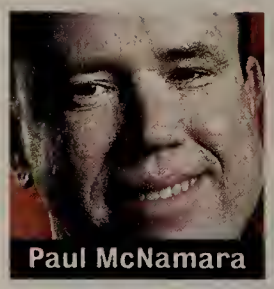
The problem with these kinds of analyses is they aren't identifying real costs because you can't equate a solid hour of an employee's time with an hour of his time that's broken up into chunks of minutes or even seconds over a longer period — it is highly unlikely that anything productive can be done in a minute. If you are calculating the value of an employee, it has to be on the basis of actual productive work done and revenue derived from that work. For example, the fact that a salesperson wastes 35 minutes per month waiting to logon to the network and 25 minutes more for delayed e-mail and 23 minutes on file transfers — that's irrelevant if what we're expecting from him is orders totaling some value and he reaches his target.

Now, what if the salesman isn't making his target? We certainly need to look at what could be making his job harder, but I doubt whether the loss of 83 minutes per month — less than 0.8% of his time — is going to be the cause. Yet, if your organization uses this kind of time-aggregation argument and adds up all these ultrathin slices of time into one great big bucket of cost, you've got an argument, albeit a bogus one, for doing something.

Of course, in that fantasy world of complete control, it might seem that addressing all the tiny service issues in your network is justified, but that's not looking at the bigger picture — whether you're wasting money trying to fix a non-problem.

So, here's your quandary: Do you use a dubious argument to get the budget to implement network improvements that aren't really needed, or do you take the moral high ground and pitch only for projects that are truly justified? And what do you do when senior management uses that same kind of argument to get you to do something?

Gibbs is in total control in Ventura, Calif. Argue your case to backspin@gibbs.com.



NETBUZZ

News, Insights, oddities

Paul McNamara

Rifling through my DEMO notebook

Seen and heard last week at Network World's DEMOfall '08 in San Diego:

When RealNetworks took the wraps off new DVD-to-PC copying software, one major selling point was that users now can sleep soundly knowing for the first time that their homemade copies of commercial movies are perfectly legal.

Maybe. The motion picture industry, which doesn't like even to see the words "DVD" and "copying" in the same sentence, said it's not ready to endorse that blanket assurance from RealNetworks, because it had learned of the product only days before. The industry has fought such DVD copying in the past, last year losing a drawn-out courtroom battle with an upstart maker of high-end media servers in a ruling one losing attorney suggested —warned, actually — would "open the floodgates" to the type of inexpensive DVD copying system RealNetworks unveiled. The industry has appealed that court ruling.

Called RealDVD, the $50 application (introductory price $30) is designed to make digital movie collections more accessible, portable and easier to manage. "Unlike existing consumer applications on the market today, RealDVD is licensed DVD software that saves a secure copy of a DVD to the hard drive without removing or altering the CSS encryption," the company says. RealDVD needs 10 to 40 minutes to copy a flick and eats up 4 to 8 gig per movie saved, so portable storage devices will be required to augment hard drives for users who want to collect more than a handful of movies.

As for that much-ballyhooed promise of legality, the Motion Picture Association of America isn't ready to agree: "We really just became aware of this in the past 24 hours," Elizabeth Kaltman, a spokeswoman for the MPAA, told me. "We have nothing else to say at this time."

I'm betting its lawyers will later.

A bit later in the program, Kara Swisher and Walt Mossberg of *The Wall Street Journal* fame conducted a panel in which they were to "interview" each other in the same aggressive manner one might expect of these veteran journalists when taking on a Bill Gates or Steve Jobs. That didn't happen — they were cupcakes toward each other — but they had plenty of interesting things to say, including this rather ominous warning from Mossberg concerning the future of 3G phones and the increasingly heavy-duty computing they are enabling: "I think there's an enormous cloud over all of this. I'm really beginning to wonder whether, at least in the United States, the 3G networks that are supposed to provide a broadband experience are going to be able to hold up as people use these devices as little laptops."

SpinSpotter, a start-up founded by former radio talk-show host and Microsoft executive Todd Herman, debuted a browser plug-in that is designed to help users identify media bias with precision and objectivity — uh, good luck with that.

"By installing a SpinSpotter toolbar called Spinoculars, users of the service can easily see, share and edit any clear sign of bias anywhere on the Web," the company said. You can see the potential in such a service if it would stick to matters of demonstrable fact (such as those exist).

However, SpinSpotter wants to referee writing, and I had a problem with one of the examples it flagged from a *New York Times* story that included this passage: "Senator Hillary Rodham Clinton ... delivered an emphatic plea at the Democratic National Convention to unite behind her rival, Senator Barack Obama, no matter what ill will lingered."

A penalty flag was thrown at the phrase "emphatic plea": "The

See Net Buzz, page 18

STUFF HAPPENS.

No matter where you are or what you're doing, something or someone can compromise your DNS. Be the first to know about your domain or email problem, especially when your business depends on it.

Alert services that work for you 24/7/365

DNSalerts *(domain monitoring)*

RBLalerts *(email blacklist monitoring)*

■ *Put our alerts to the test* - **FREE!**
Select: Promo Pack | Alert Combo 2 month
Coupon code: **NWWALERT**

DNSstuff.com
CLICK. CHECK. RESOLVE.

UPTIME COMES STANDARD.

intel Xeon inside
Powerful. Efficient.

IBM System x3550 Express
$2,205

OR $56/MONTH FOR 36 MONTHS[1]

IBM System x3550™ Express. It's designed to stay up and running and help reduce system downtime. In fact, it can even identify a potential problem before it becomes one. And if you ever have to replace a component, you can do that without having to shut down. Just one more way the x3550 Express keeps downtime down.

From the people and Business Partners of IBM.

It's innovation made easy.

RUN YOUR CRITICAL APPLICATIONS WITH CONFIDENCE.

PN: 7978EJU

- Featuring up to two Quad-Core Intel® Xeon® Processors E5430 2.66GHz
- Hot-swap redundant cooling for high availability
- Includes IBM Director and PowerExecutive to help manage power consumption, increase uptime, reduce costs and improve productivity
- 3-year on-site limited warranty[2] on parts and labor

IBM SYSTEM STORAGE™ DS3400 EXPRESS KIT

$13,793

OR $352/MONTH FOR 36 MONTHS[1]

PN: 1726-42U

- All-in-one kit makes it easier to migrate from your DAS network to SAN
- Includes IBM System Storage DS3400 Dual Controller, four IBM Emulex 42C2069 4Gb/s PCI Express HBAs, Brocade SAN 8 Port Fibre Channel switch (16 total ports), twelve 4Gb/s SFPs, and eight 5-meter optical LC cables
- Emulex EZ Pilot™ installation/management software included

IBM TIVOLI® CONTINUOUS DATA PROTECTION FOR FILES

$42 per user

PN: D613ALL

- Save and recovery technology enables file recovery to any point in time
- Continuous Data Protection (CDP) protects your data from the aftermath of a virus attack or user error
- Up to 3 backup/replication areas help protect against corruption, file loss or system loss

COMPLIMENTARY SYSTEMS ADVISOR TOOL

Want to find the right server or storage system for you? Our Systems Advisor Tool can help. Just give the tool a little input, and it will identify products that can help meet your business needs. Get started now at **ibm.com**/systems/uptime

IBM express advantage™

ibm.com/systems/uptime
1 866-872-3902 (mention 6N8AH04A)

1. IBM Global Financing offerings are provided through IBM Credit LLC in the United States and other IBM subsidiaries and divisions worldwide to qualified commercial and government customers. Monthly payments provided are for planning purposes only and may vary based on your credit and other factors. Lease offer provided is based on an FMV lease of 36 monthly payments. Other restrictions may apply. Rates and offerings are subject to change, extension or withdrawal without notice.
2. IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply. For a copy of applicable product warranties, visit ibm.com/servers/support/machine_warranties or write to: Warranty Information, P.O. Box 12195, RTP, NC 27709, Attn: Dept. JDJA/B203. IBM makes no representation or warranty regarding third-party products or services, including those designated as ServerProven® or ClusterProven.® Telephone support may be subject to additional charges. For on-site labor, IBM will attempt to diagnose and resolve the problem remotely before sending a technician. On-site warranty is available only for selected components. Optional same-day service response is available [for select systems] at an additional charge. IBM, the IBM logo, IBM Express Advantage, System x and System Storage are trademarks of International Business Machines Corporation in the United States and/or other countries. For a complete list of IBM trademarks, see ibm.com/legal/copytrade.shtml. Intel, the Intel logo, Xeon and Xeon Inside are trademarks or registered trademarks of Intel Corporation in the U.S. and other countries. All other products may be trademarks or registered trademarks of their respective companies. All prices and savings estimates are based upon IBM's estimated retail selling prices as of 03.24/2008. Prices and actual savings may vary according to configuration. Resellers set their own prices, so reseller prices and actual savings to end users may vary. Products are subject to availability. This document was developed for offerings in the United States. IBM may not offer the products, features, or services discussed in this document in other countries. Prices are subject to change without notice. Starting price may not include a hard drive, operating system or other features. Contact your IBM representative or IBM Business Partner for the most current pricing in your geographic area. © 2008 IBM Corporation. All rights reserved.